

Service Manual

PIONEER
The Art of Entertainment

• KEH-3200QR/UC



ORDER NO.
CRT1426

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

KEH-3200QR UC
KEH-2200QR UC
KEH-3250QR ES
KEH-2250QR ES
KEH-1250 ES

Note:

- See the separate manual CX-197 (CRT1328) for the cassette mechanism description.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Whenever a cord assembly may be used for repairing, do not fail to employ the cord assembly designed for the related part.

Do not apply any cord assembly designed for a different part.

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PIONEER ELECTRONIC CORPORATION

4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan

PIONEER ELECTRONICS SERVICE INC., P.O. Box 1760, Long Beach, California 90801 U.S.A.

PIONEER ELECTRONICS OF CANADA, INC., 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada

PIONEER ELECTRONIC (EUROPE) N.V., Haven 1087 Keelberglaan 1, 9120 Melsele, Belgium

PIONEER ELECTRONICS AUSTRALIA PTY. LTD., 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SPECIFICATIONS

● KEH-3200QR, KEH-2200QR

General	
Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 141(D) mm (7 1/8" × 2 1/8" × 5 1/2") (in.)
(nose)	186(W) × 58(H) × 16(D) mm (7 3/8" × 2 1/4" × 5/8") (in.)
(mounting bracket)	182(W) × 52(H) × 152.5(D) mm (7 1/8" × 2 1/8" × 6") (in.)
Weight	1.4 kg (3.1 lbs.)
Amplifier	
Continuous power output	is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output	25 W × 2/15 W × 4 (EIAJ)
Load impedance	4 Ω (4 — 8 Ω allowable)
Preout output level/impedance	500 mV/100 Ω
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness contour	+8 dB (100 Hz) (volume: -30 dB)
Tape player	
Tape	Compact cassette tape (C-30 — C-90)
Tape speed	4.76cm/sec. (+ 0.14cm/sec. — 0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response (KEH-3200QR)	Metal: 40 — 17,000 Hz (±3 dB)
(KEH-2200QR)	40 — 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	Metal: Dolby B NR IN: 63 dB (IHF-A network)
(KEH-3200QR)	Dolby NR OUT: 55 dB (IHF-A network)
(KEH-2200QR)	52 dB (IHF-A network)
FM tuner	
Frequency range	87.9 — 107.9 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (24CA) (±400 kHz)
Three-signal intermodulation (desire signal level)	50 dBf
(KEH-3200QR)	55 dBf (two undesire signal level: 110 dBf)
(KEH-2200QR)	55 dBf (two undesire signal level: 110 dBf)
AM tuner	
Frequency range	530 — 1,710 kHz
Usable sensitivity	16 μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±10 kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

● KEH-3250QR, KEH-2250QR

General	
Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 141(D) mm (7 1/8" × 2 1/8" × 5 1/2") (in.)
(nose)	186(W) × 58(H) × 16(D) mm (7 3/8" × 2 1/4" × 5/8") (in.)
(mounting bracket)	182(W) × 52(H) × 152.5(D) mm (7 1/8" × 2 1/8" × 6") (in.)
Weight	1.4 kg
Amplifier	
Continuous power output	is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output	25 W × 2/15 W × 4 (EIAJ)
Continuous power output	11 W × 2 (1% dist. at 1 kHz)
Load impedance	4 Ω (4 — 8 Ω allowable)
Preout output level/impedance (KEH-3250QR)	500 mV/100 Ω
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness contour	+8 dB (100 Hz) (volume: -30 dB)
Tape player	
Tape	Compact cassette tape (C-30 — C-90)
Tape speed	4.76cm/sec. (+ 0.14cm/sec. — 0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response (KEH-3250QR)	Metal: 40 — 17,000 Hz (±3 dB)
(KEH-2250QR)	40 — 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	Metal: Dolby B NR IN: 63 dB (IEC-A network)
(KEH-3250QR)	Dolby NR OUT: 55 dB (IEC-A network)
(KEH-2250QR)	52 dB (IEC-A network)
FM tuner	
Frequency range	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
AM tuner	
Frequency range	531 — 1,602 kHz (9 kHz)
Usable sensitivity	16 μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)
	50 dB (±10 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

● KEH-1250

General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 147.5(D) mm
(nose)	170(W) × 46(H) × 12(D) mm
Weight	1.3 kg

Amplifier


Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.	
Maximum power output	25 W × 2/15 W × 4 (EIAJ)
Continuous power output	11 W × 2 (1% dist. at 1 kHz)
Load impedance	4 Ω (4 — 8 Ω allowable)
Loudness contour	+8 dB (100 Hz)
	(volume: -30 dB)

Tape player

Tape	Compact cassette tape (C-30 — C-90)
Tape speed	4.76cm/sec. (+ 0.14cm/sec., - 0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response	40 — 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	52 dB (IEC-A network)

● Features

● KEH-3200QR, KEH-2200QR

- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.
- Built-in Dolby B NR for reduced tape hiss.
(This feature is provided for the KEH-3200QR.)
- Music search function allows automatic playback from the beginning of the selection being played or the beginning of the next selection.
(This feature is provided for the KEH-3200QR.)
- 25 W × 2 maximum output for sound with power to spare. Combination with separately available power amp unit allows configuration of a powerful 4-speaker system.
- The "Quick Release Mounting Bracket", facilitates mounting and dismounting of the car stereo and serves to protect the unit from theft.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

● KEH-3250QR, KEH-2250QR

- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.

FM tuner


Frequency range	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	531 — 1,602 kHz (9 kHz)
	530 — 1,710 kHz (10 kHz)
Usable sensitivity	18 μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)
	50 dB (±10 kHz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

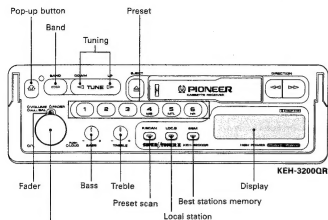
- Built-in Dolby B NR for reduced tape hiss.
(This feature is provided for the KEH-3250QR.)
- Music search function allows automatic playback from the beginning of the selection being played or the beginning of the next selection.
(This feature is provided for the KEH-3250QR.)
- 25 W × 2 maximum output for sound with power to spare. Combination with separately available power amp unit allows configuration of a powerful 4-speaker system.
(This feature is provided for the KEH-3250QR.)
- The "Quick Release Mounting Bracket", facilitates mounting and dismounting of the car stereo and serves to protect the unit from theft.
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● KEH-1250

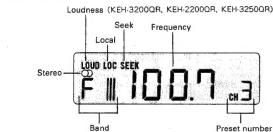
- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.
- Choice of either 4-speaker or 2-speaker system is possible. When the 4-speaker system (15 W × 4) is used, volume of front and rear speakers can be adjusted independently, for optimum sound balance. The 2-speaker system (25 W × 2) provides more than enough power for clear, high-fidelity playback.

2. USING THE RADIO

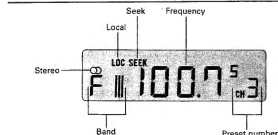
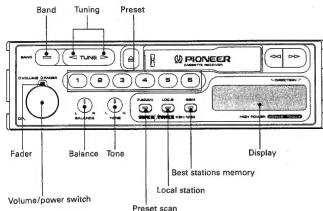
● KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR



Volume/balance/loudness/
power switch (KEH-3200QR, KEH-2200QR, KEH-3250QR)
Volume/balance/power switch (KEH-2250QR)



● KEH-1250



● Before attempting operation...

- Set the fader control to the upright position.
- Turn the power switch to the right causes power to switch ON and the current frequency to appear on the display.
- Since the set is designed preferentially for tape play, eject a cassette tape, if mounted, before operating the radio.
- Press the band switch to select the band.
- Press both ends of tuning button and the seek tuning indicator will appear on the display.
- Press either the left or right side of the tuning button to tune in the desired frequency. (Pressing the right side will increase the frequency.)
- Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- Adjust the tone.

● To enter a frequency into the preset memory...

- Hold down one of the preset buttons (1-6) for approximately two seconds. The frequency is stored in memory (assigned to the preset button pressed) once the preset number stops flashing on the display.

Six FM1 frequencies, six FM2 frequencies, six FM3 frequencies and six AM frequencies can be entered.

● Best Stations Memory Button

Automatically tunes strong frequencies and assigns them to preset buttons 1 through 6 for one-touch automatic tuning. The best stations memory function is activated by pressing this button for approximately 2 seconds. The best stations memory function is indicated by — flashing on the display, and this function can be canceled by pressing the band switch. The frequency display returns once the best stations memory function is complete. The frequency displayed at this time is of the strongest station assigned to preset button 1 by the best stations memory function.

- 6 best (strongest) frequencies are memorized in the 6 preset buttons in the order of their strength, the strongest one being assigned to preset button 1.
- The frequencies previously assigned to the preset buttons are retained when 6 frequencies cannot be located.
- The best stations memory is in operation while — is flashing on the display.

● Local Station Switch

Pressing this switch increases the seek threshold level so that only relatively strong stations can be tuned in (local indicator will illuminate on the display). Local seek threshold level can be selected among four levels for FM and two levels for AM.

Holding this switch down for approximately 2 seconds and then pressing the right side of the tuning button changes the display from L-1, L-2, L-3 to L-4. Pressing the left side of the tuning button changes the display from L-4, L-3, L-2 to L-1 (L-1 and L-2 for AM). The bigger the number, the higher the seek threshold becomes and only relatively strong stations can be tuned in.

● Fader Control

This control is used to adjust the balance between the front and rear speakers when using a 4-speaker system. Turning the control to the right decreases the volume of the rear speakers, while turning it to the left decreases the volume of the front speakers. With 2-speaker systems, set this control to the upright position.

A considerable amount of sound will continue to be produced from speakers of a 4-speaker system which have been cut by setting the fader control either to the front speakers or rear speakers. This is normal and does not indicate malfunction.

Important (KEH-3200QR, KEH-2200QR, KEH-3250QR)

The output of power amp. (sold separately) is not affected by fader control when this unit is linked with the power amp.

● Loudness Switch (KEH-3200QR, KEH-2200QR, KEH-3250QR)

When playing back a tape or listening to the radio at low volume, the low tone is emphasized and more clearly heard by pressing this switch.

● Auto-Loudness (KEH-2250QR, KEH-1250)

When playing back a tape or listening to the radio at low volume, the low tone is automatically emphasized.

● Pop-up button (KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR)

When the quickrelease handle is on the bottom, push the button to move it up slightly. Push it when you remove the unit from the dashboard.

The button works only when the handle lock is released.

Before removing this unit from your vehicle, be sure to remove cassette tapes and make sure that radio power is switched OFF.

Seek Tuning

Press both ends of tuning button and tuning to the next higher or lower broadcast on the band can be accomplished automatically by simply pressing either the right or left side of the tuning button. FM frequencies change in 0.2 MHz steps while those in the AM band change in 10 kHz steps. (KEH-3200QR, KEH-2200QR)

FM frequencies change in 50 kHz steps while those in the AM band change in 9 kHz steps. (KEH-3250QR, KEH-2250QR, KEH-1250)

- AM frequencies are tuned in 10 kHz steps after the tuning steps are changed.

Preset Scan Tuning

Pressing the preset scan button (CH indicator flashes) causes previously stored frequencies to be tuned in sequentially for eight seconds each. Press again when the desired frequency is tuned in to cancel preset scan tuning.

Preset Tuning

Pressing the preset button instantly tunes in the frequency programmed in the memory for that button.

Manual Tuning

When manual tuning is employed, FM frequencies change in 0.2 MHz steps while AM frequencies change in 10 kHz steps. (KEH-3200QR, KEH-2200QR)

When manual tuning is employed, FM frequencies change in 50 kHz steps while AM frequencies change in 9 kHz steps.

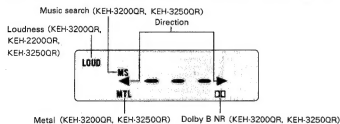
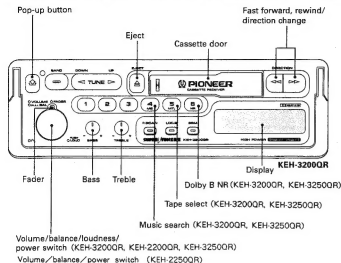
(KEH-3250QR, KEH-2250QR, KEH-1250)

- AM frequencies are tuned in 10 kHz steps after the tuning steps are changed.

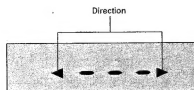
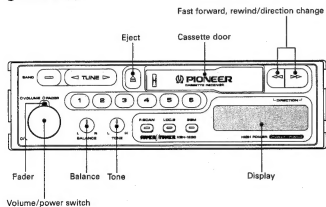
1. Press both ends of tuning button and the seek tuning indicator will disappear from the display.
2. Change the frequency by pressing either the left or right side of the tuning button. Pressing the button once will change the frequency one step (see above). Continuously depressing either side of the button will successively change the frequency at the prescribed step.

3. USING THE TAPE DECK

● KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR



● KEH-1250



● Before attempting operation...

- Set the fader control to the upright position.
- Turning the power switch to the right causes power to switch ON.
- Loading a cassette tape into the load slot causes playback to begin automatically.
- Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- Adjust the tone.
- When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, press the eject button.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.
- Loose tapes should be rewound with the aid of a pencil and unevenly wound tapes rewound with the use of the fast forward function.
- Be sure to eject the tape when the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.

● Fast Forward/Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons can be regarded as fast forward/rewind buttons.

For fast forward, press the high-speed tape transport button that corresponds to the direction that is shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).

For rewind, press the button that is opposite that of the direction shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).

Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button.

● Direction Change

Push the fast forward and rewind buttons together to switch from one side of the tape to the other (from Side A to Side B or vice versa).

● Dolby B NR Switch (KEH-3200QR, KEH-3250QR)

Press when playing a tape recorded with Dolby NR.

● Tape Select Switch (KEH-3200QR, KEH-3250QR)

This switch is used to switch to the proper mode for the tape being used and should be depressed when using chrome or metal tapes.

Music Search (KEH-3200QR, KEH-3250QR)

● Returning to the beginning of selection A

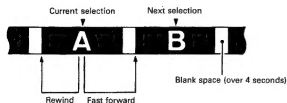
Press the music search button and then the high-speed tape transport button for the direction opposite that is shown by the direction indicator. Playback will automatically start from the beginning of selection A.

● Moving from selection A to selection B

Press the music search button and then the high-speed tape transport button that corresponds to the direction shown by the direction indicator. Playback will automatically start from the beginning of selection B.

To enable regular fast forward/rewind operations, press the music search button again to turn the function OFF. The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded "blank" portions between selections less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations longer than 4 seconds → the unit reads these as blanks between selections.
- Portions recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.



4. CONNECTIONS

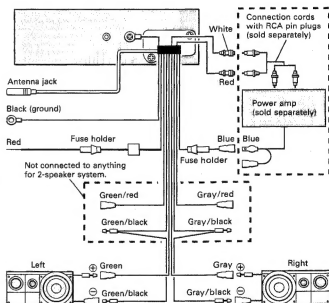
Note:

- To avoid shorts in the electrical system, be sure to disconnect the battery \ominus cable before beginning installation.
- Replace fuses only with the types stipulated on the fuse holder.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Cover unused terminals with tape to prevent electrical shorts.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker \ominus leads are common.
- Speakers connected to this unit must be a high-power type possessing maximum input of at least 25 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.
- Refer to the power amp owner's manual when connecting a power amp (sold separately) to the RCA pin jack. (KEH-3200QR, KEH-2200QR, KEH-3250QR)
- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.

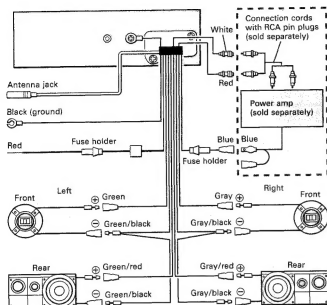
Black (ground)	To vehicle (metal) body.
Blue	If this unit is combined with a power amp, connect its blue lead to the blue lead (system control terminal) of the power amp. If combined with an auto-antenna, connect its blue lead to the relay control terminal of the auto-antenna. (MAX. 300 mA, 12 V DC)
Orange (KEH-1250)	To terminal always supplied with power regardless of ignition switch position.
Red	To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

● KEH-3200QR, KEH-2200QR

2-speaker system

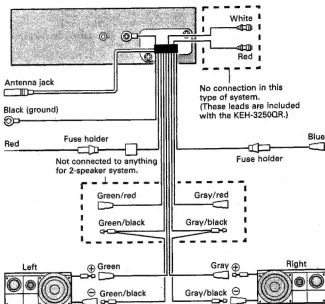


4-speaker system 1

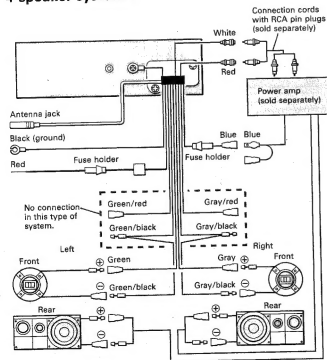


● KEH-3250QR, KEH-2250QR

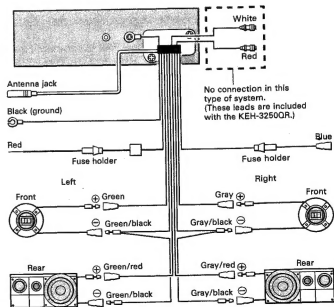
2-speaker system



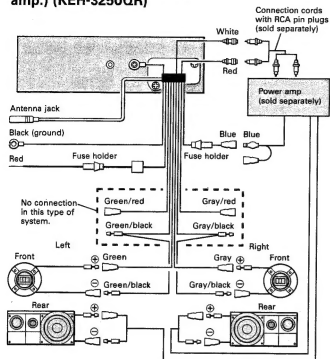
4-speaker system 2



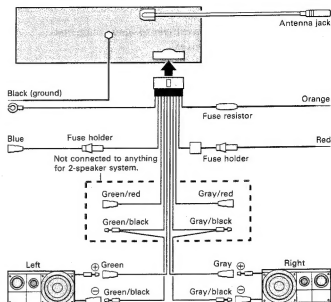
4-speaker system 1



4-speaker system 2 (Using separately available amp.) (KEH-3250QR)

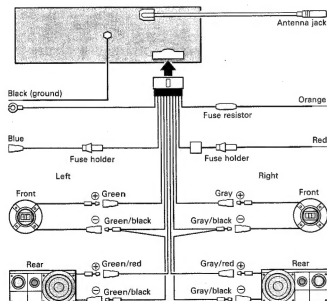


2-speaker system



● KEH-1250

4-speaker system



5. DISASSEMBLY

• Removing the Case

1. Insert and turn a screwdriver to remove the case.
2. Raise the case to remove.

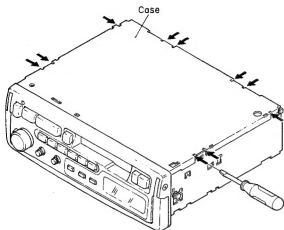


Fig. 1

• Removing the Grille Assy

1. Remove the two knobs.
2. Press the tabs at four locations, and then pull out the grille assy.

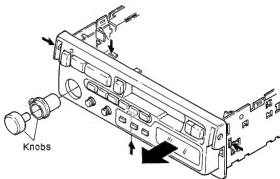


Fig. 3

• Removing the Handle

1. Remove the two screws, and then remove the handle.

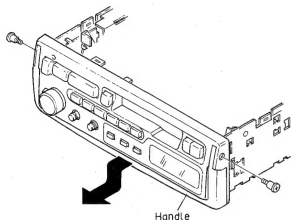


Fig. 2

• Removing the Cassette Mechanism Assy

1. Remove the insulator
2. Disconnect the connector.
3. Remove the six screws A and two screws B.
4. Remove the cassette mechanism assy.

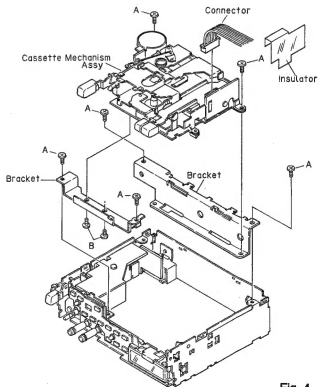


Fig. 4

● Removing the Dolby NR P. C. Board
(KEH-3200QR, KEH-3250QR)

1. Pull out the Dolby NR P. C. Board.

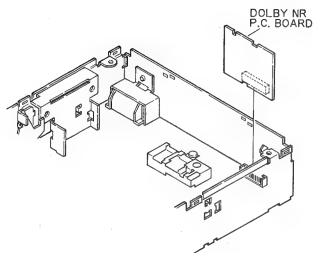


Fig. 5

● Removing the Tuner Amp Unit (KEH-1250/ES)

1. Remove the screw C and for screws D.
2. Raise up on tuner amp unit to remove it from the chassis unit.

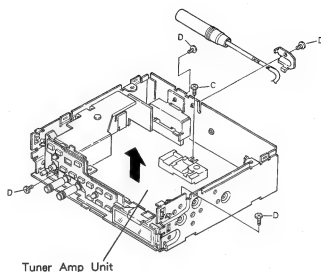


Fig. 7

● Removing the Tuner Amp Unit
(KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR)

1. Remove the four screws C.
2. Raise up on tuner amp unit to remove it from the chassis unit.

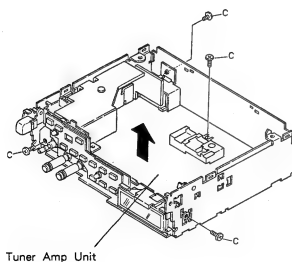


Fig. 6

6. ADJUSTMENT

● Connection Diagram

NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

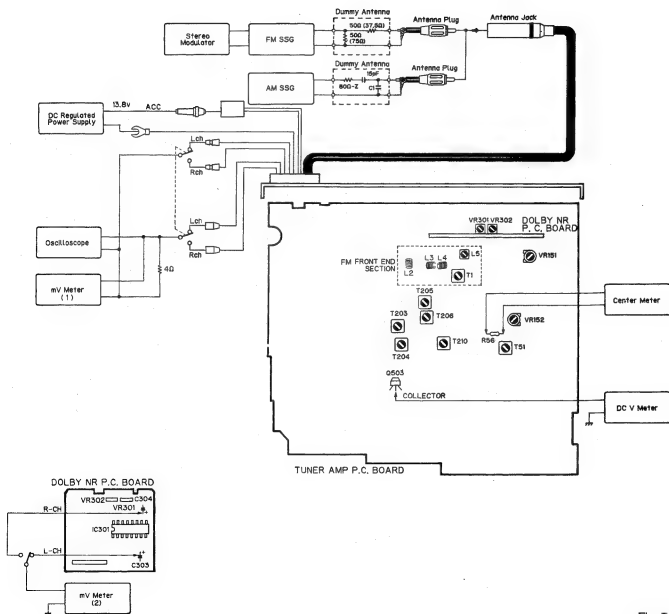


Fig. 8

7. BLOCK DIAGRAM

● KEH-3200QR/UC

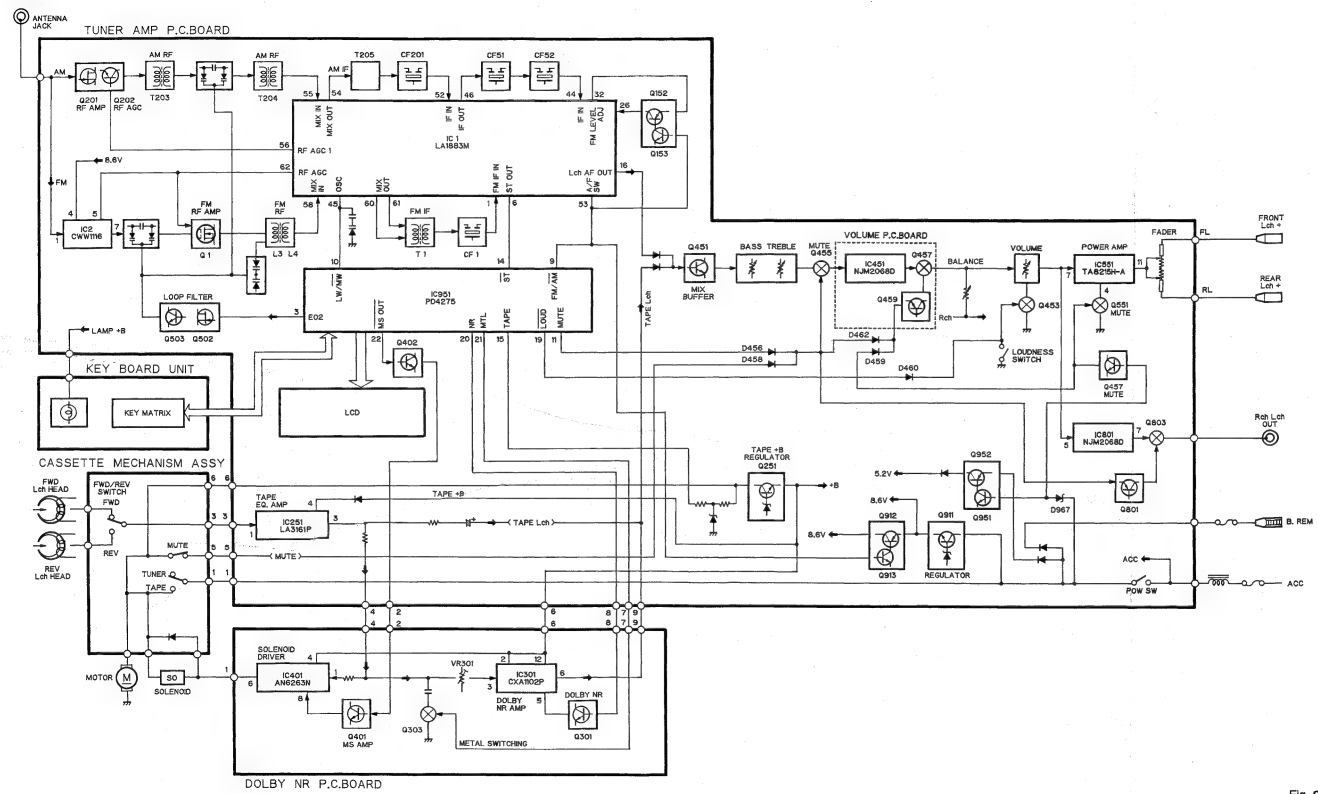


Fig. 9

DOLBY NR ADJUSTMENT

(KEH-3200QR/UC, KEH-3250QR/ES)

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR301 (Lch) VR302 (Rch)	mV Meter (2): -6dBs ± 1dB (DOLBY NR Switch: OFF)

FM ADJUSTMENT

※ 1 Stereo MOD.: Pilot=10%

※ 2 Stereo MOD.: 1kHz, L+R=90%, Pilot=10%

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBf)			
Tuning Volt	1	—	—	108.0	L5	DC V Meter: 7.0V
Tracking	1	98.1	15	98.1	L2, L4	mV Meter (1): Maximum
	2	98.1	15	98.1	T1	mV Meter (1): Maximum
IF	1	98.1 Unmodulated	65	98.1	T51	Center Meter: 0
Pilot Cancel	1	98.1※1	65	98.1	VR151	mV Meter (1): Minimum (MPX Filter: OFF)
ARC	1	98.1※2	40	98.1	VR152	mV Meter (1): Separation 5dB

AM ADJUSTMENT

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1	—	—	530	T210	DC V Meter: 1.0V
Tracking	1	1,000	20	1,000	T203, 204, 205, 206	mV Meter (1): Maximum

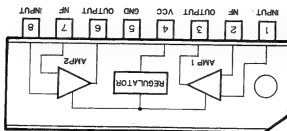
AM ADJUSTMENT ES model when tuning step at 9kHz.

(KEH-3250QR/ES, KEH-2250QR/ES, KEH-1250/ES)

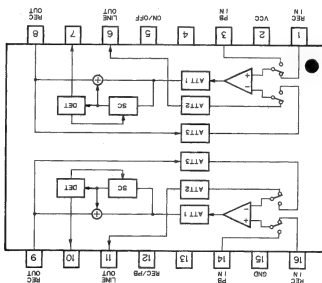
	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1	—	—	531	T210	DC V Meter: 1.0V
Tracking	1	603	20	603	T203, 204, 205, 206	mV Meter (1): Maximum



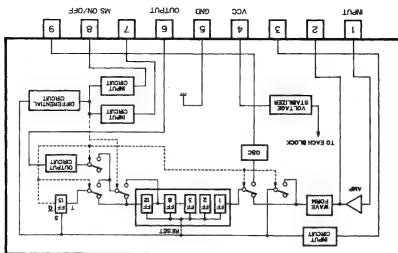
LA3161P

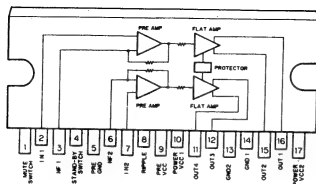
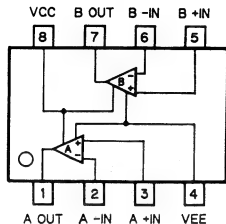


OXA1102P



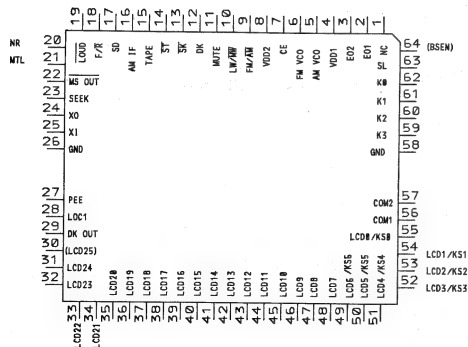
AN6263N





IC's marked by * are MOS type.
Be careful in handling them because they are very
liable to be damaged by electrostatic induction.

*PD4275

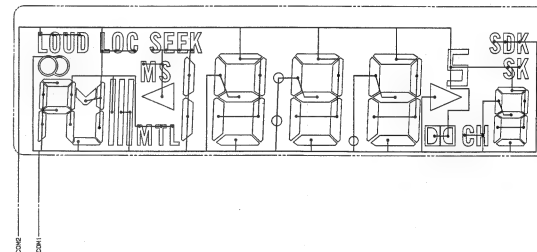


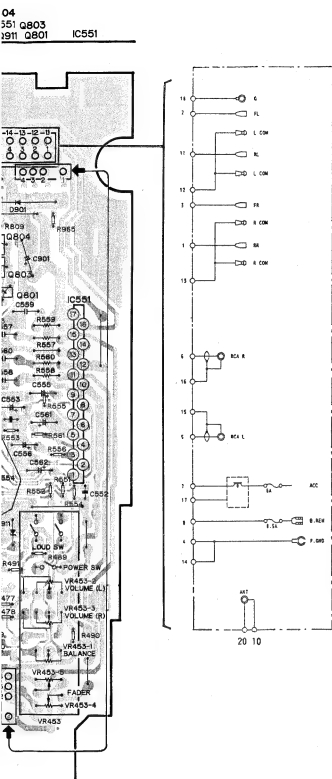
• Pin Function (PD4275)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	NC		C	Not used
2	EO1	Output	C (3)	PLL error output pins
3	EO2			
4	VDD1			Device power supply pin
5	VDD2			
6	VCOL	Input		AM local oscillator signal input pin
7	VCOH	Input		FM local oscillator signal input pin
8	CE	Input		Chip enable input pin
9	FM/AM	Output	C	FM/AM band select pin "H":FM "L":AM
10	LW	Output	C	Loop filter switching output pin "H":LW
11	MUTE	Output	C	Mute output pin "H":ON
12	DK	INPUT		SK signal input pin
13	SK	INPUT		DK signal input pin
14	ST	Input		Stereo broadcast detection signal input pin "L":Stereo indicator is displayed
15	TAPE	INPUT		Tape power ON/OFF input pin "H":ON
16	AMIF	Input		AM IF signal input pin
17	SD	Input		FM SD input "H":During broadcast reception
18	F/REV	Input		Tape motion signal input pin "H":Forward
19	LOUD	Input		Loudness ON/OFF signal input pin "L":ON
20	NR	Output	C	Dolby NR ON/OFF output pin "H":ON
21	METAL	Output	C	Tape METAL ON/OFF output pin "L":ON
22	MSOUT	Output	C	Tape MS ON/OFF output pin "L":ON
23	SEEK	Output	C	"H" level:SEEK, BSM, BSA and PSCAN
24	XO	Output	C	Quartz oscillator terminal
25	XI	Input		
26	GND			GND terminal
27	PEE	Output	C	Alarm output pin
28	LOC1	Output	C	Halt sensitivity switching pin
29	DK OUT	Output	C	"L":DX SEEK(P, SCAN) "H":LOC SEEK
30	NC			Not used

Output format	Meaning
C	C-MOS
C(3)	C-MOS(3 State)

SEGMENT

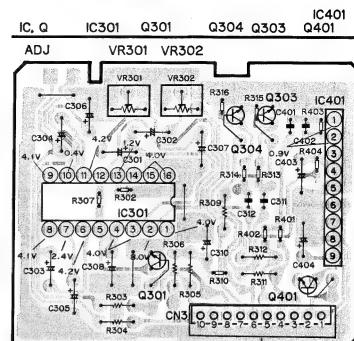




IC1

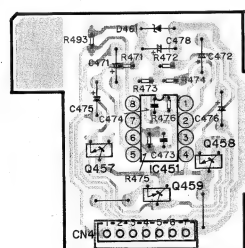
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1.3V
6	5.2V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11-13	4.8V	47	4V/5.2V
14	2.8V	51	0.2V
16, 17	2.3V	52	0V/6.9V
18	4.7V	53	4.9V/0V
20-22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59-62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		

DOLBY NR P.C. BOARD



VOLUME P.C. BOARD

IC, Q Q457 IC451 Q459 Q458



KEY BOARD UNIT

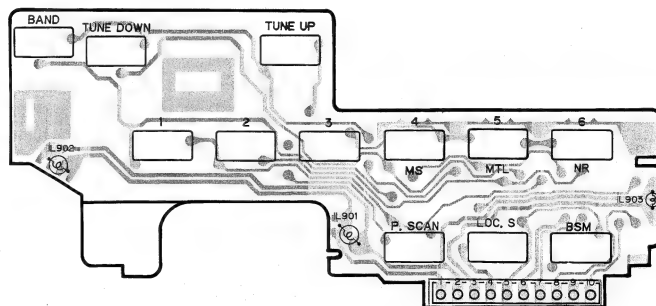
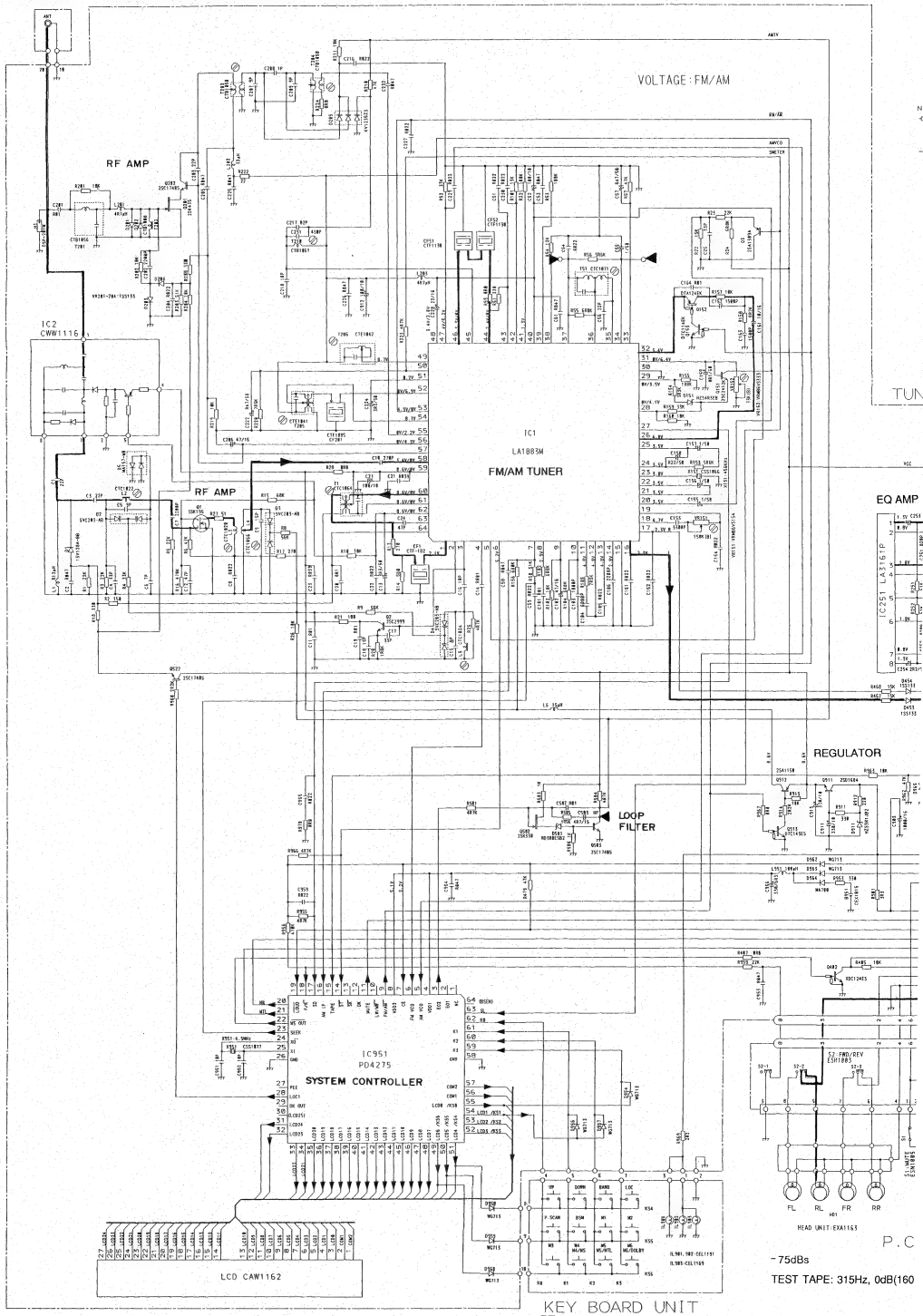


Fig. 10

9. SCHEMATIC CIRCUIT DIAGRAM (KEH-3200QR)



KEY BOARD UNIT

75dBs

TEST TAPE: 315Hz, 0dB/160

P.C

NOTE:

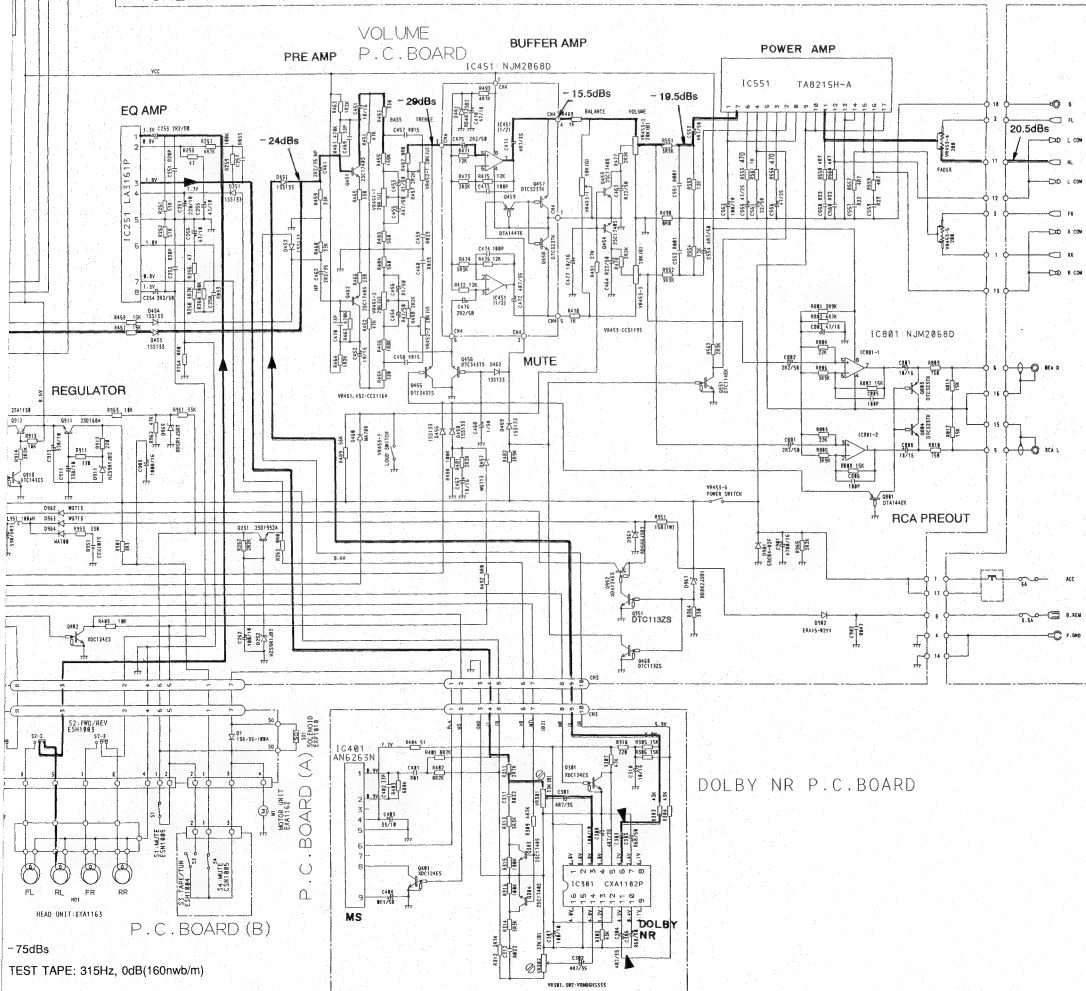
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

⊞ Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2=2R2
0.022=0022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD
● DOLBY NR P.C. BOARD

TUNER AMP P.C. BOARD

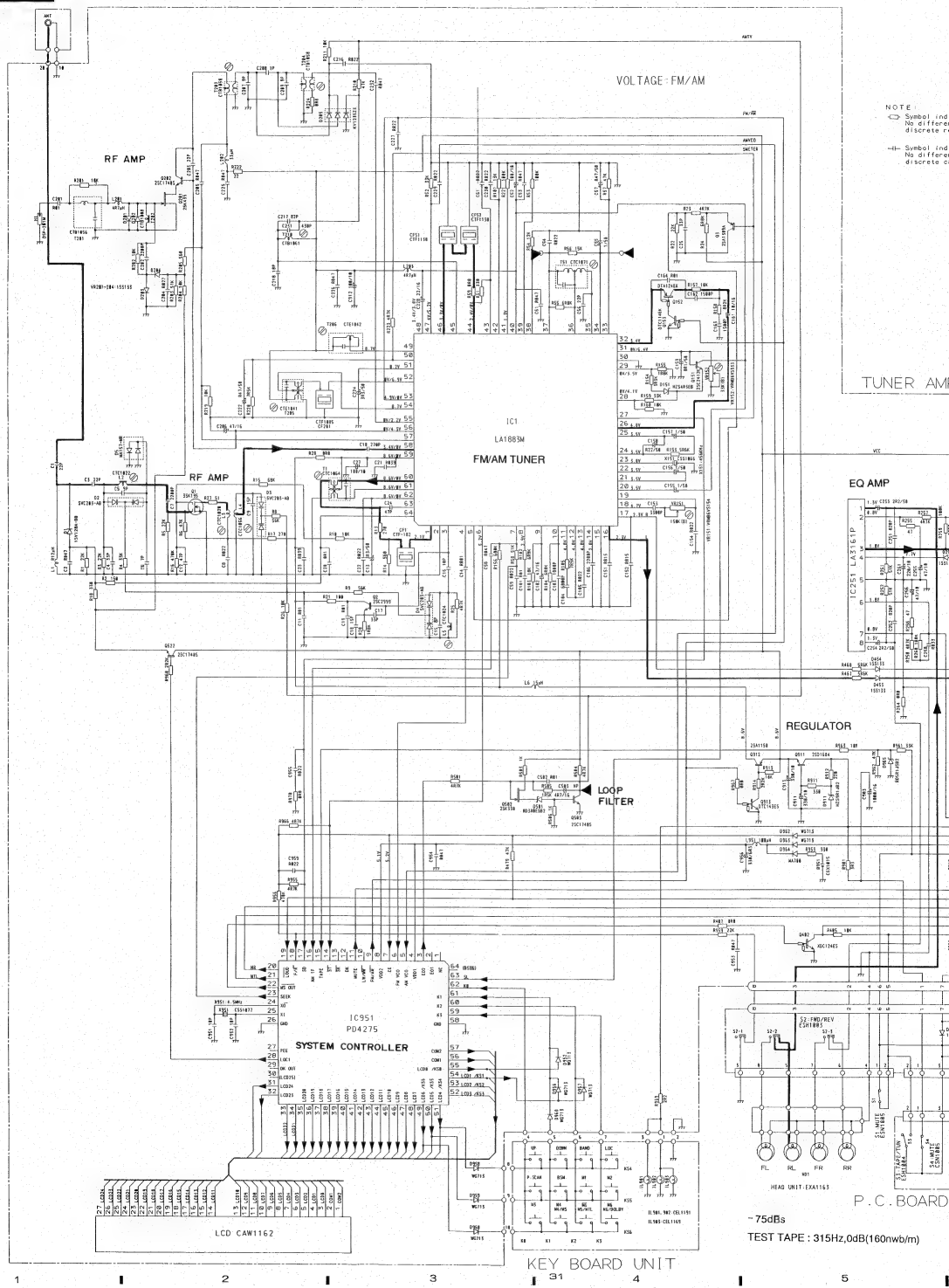


DOLBY NR P.C. BOARD

P.C. BOARD (B)

TEST TAPE: 315Hz, 0dB(160nwb/m)

10. SCHEMATIC CIRCUIT DIAGRAM (KEH-3250QR)



NOTE

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

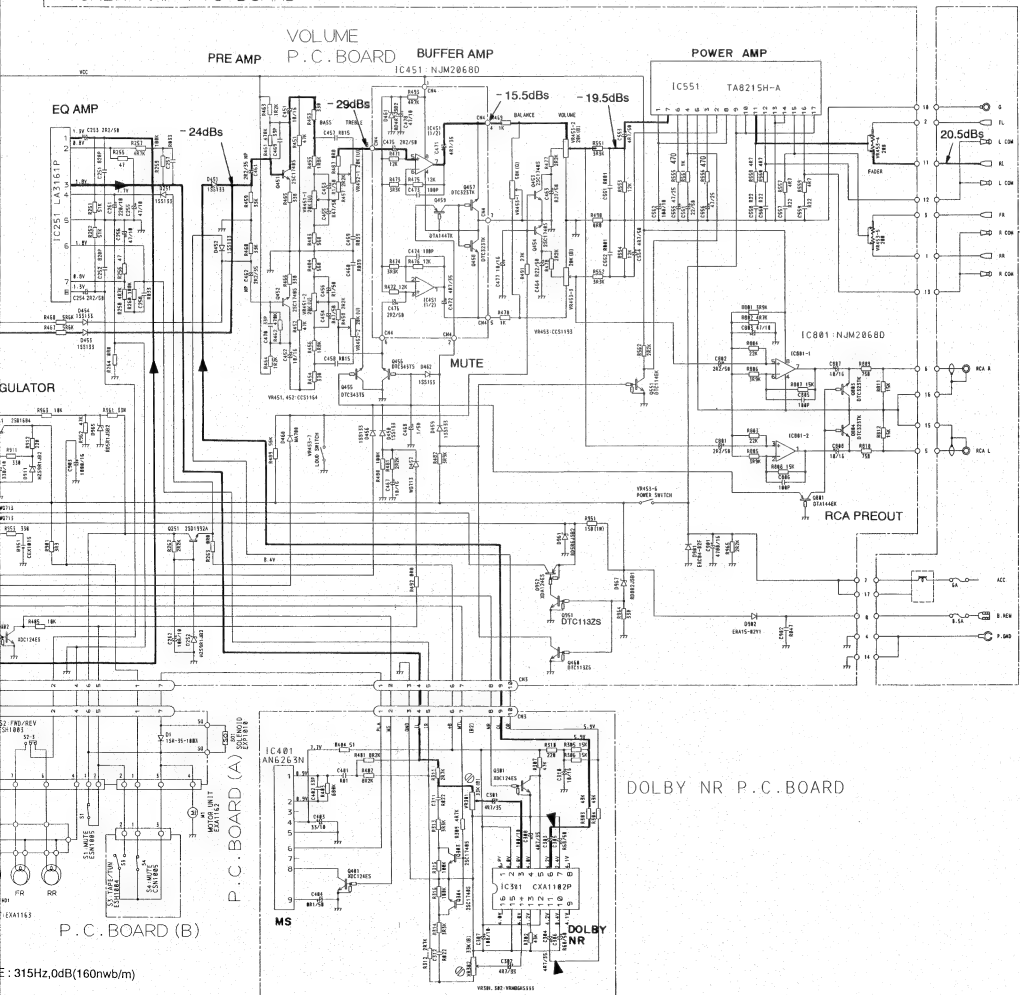
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

TUNER AMP UNIT

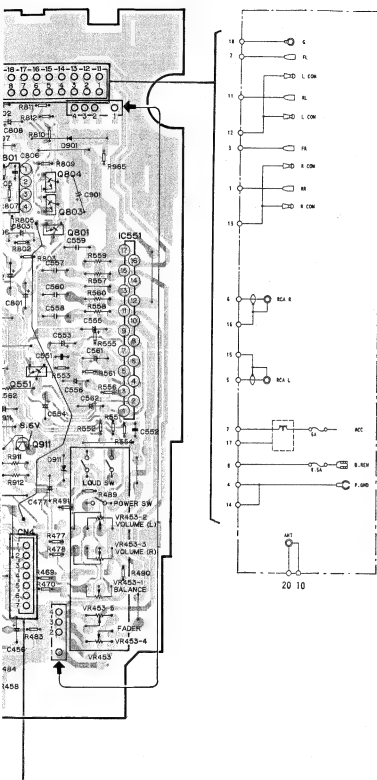
Consists of

- TUNER AMP P.C. BOARD
- VOLUME P.C. BOARD
- DOLBY NR P.C. BOARD

TUNER AMP P.C. BOARD



IC801 Q804
Q551 Q803
Q454 Q911 Q801 IC551

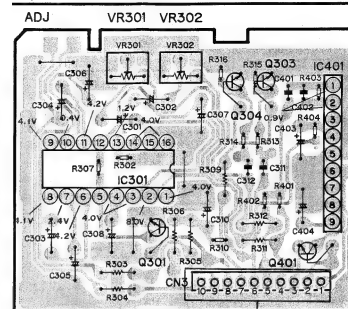


IC1

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1: 3V
6	5.2V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11-13	4.8V	47	4V/5.2V
14	2.8V	51	0.2V
16, 17	2.3V	52	0V/6.9V
18	4.7V	53	4.9V/0V
20-22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59-62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		

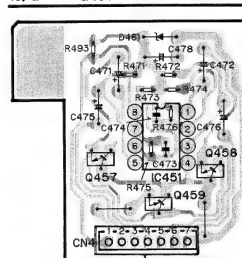
DOLBY NR P.C.BOARD

IC, Q IC301 Q303 IC401
ADJ VR301 VR302



VOLUME P.C.BOARD

IC, Q IC451
Q457 Q459 Q458



KEY BOARD UNIT

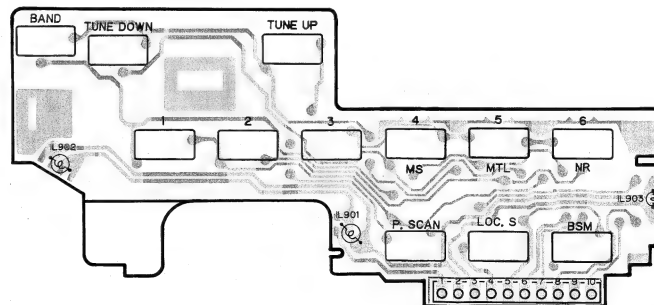


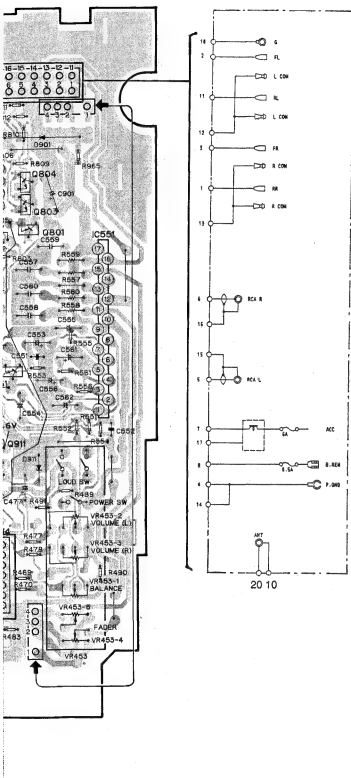
Fig. 13

12. CONNECTION DIAGRAM (KEH-2200QR)

TUNER AMP P.C. BOARD

		Q151						Q1				Q202		Q201				IC801		Q804																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Q804
Q851 Q803
Q811 Q801 IC551

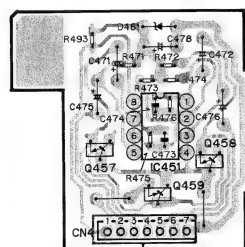


IC1

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1.3V
6	5.2V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11 - 13	4.8V	47	4V/5.2V
14	2.6V	51	0.2V
16, 17	2.3V	52	0V/8.0V
18	4.7V	53	4.9V/0V
20 - 22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59 - 62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		

VOLUME P.C. BOARD

IC, Q Q457 Q459 Q458



KEY BOARD UNIT

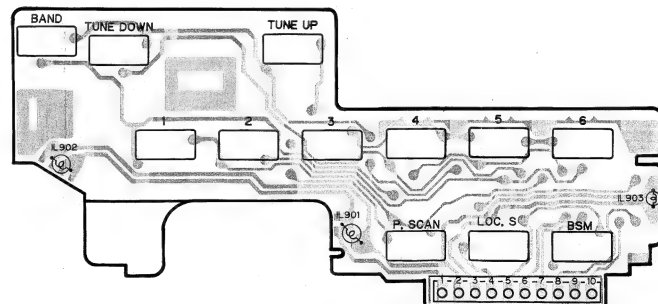
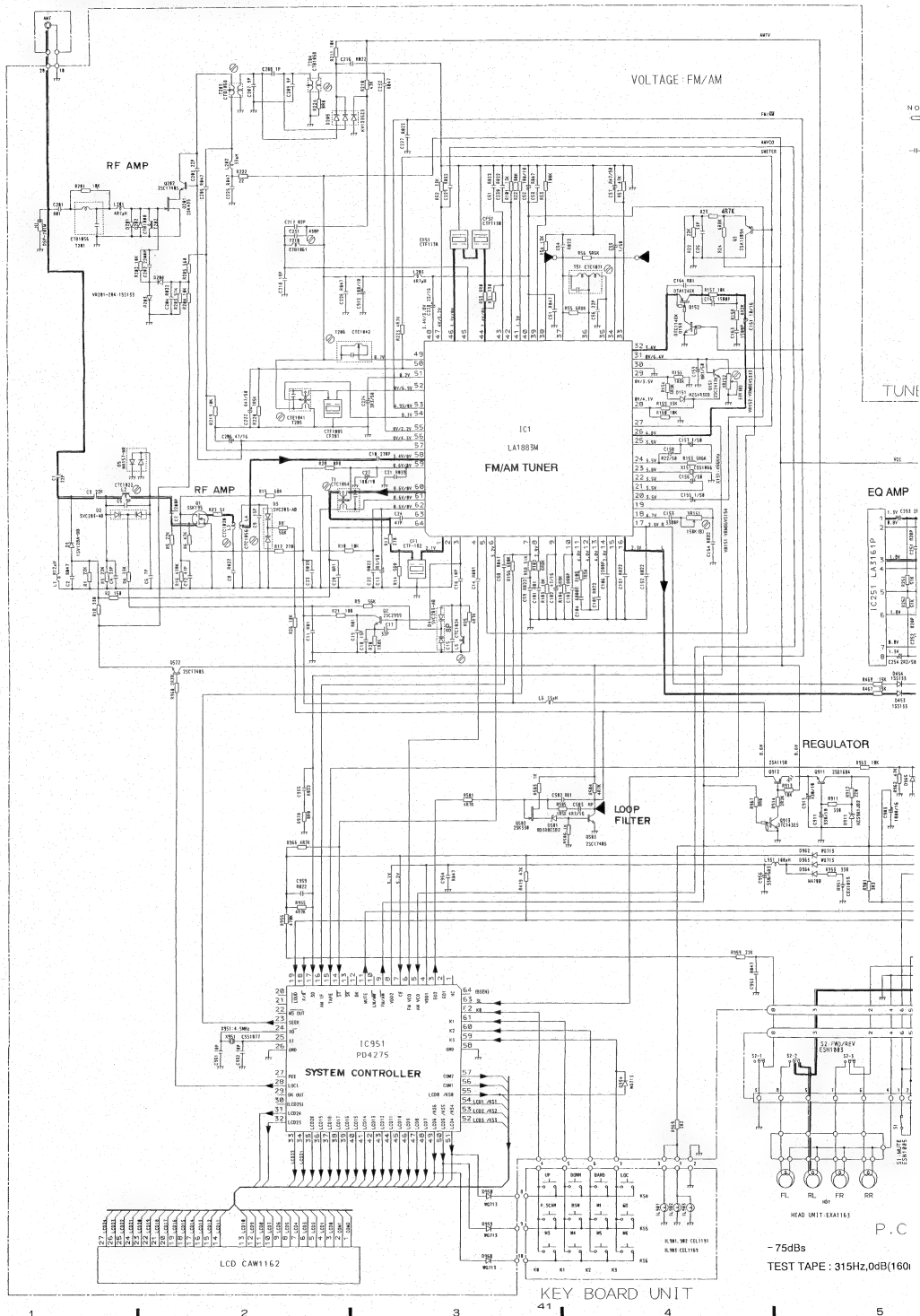


Fig. 14

13. SCHEMATIC CIRCUIT DIAGRAM (KEH-2200QR)



-75dBs
TEST TAPE : 315Hz,0dB(160)

P.C

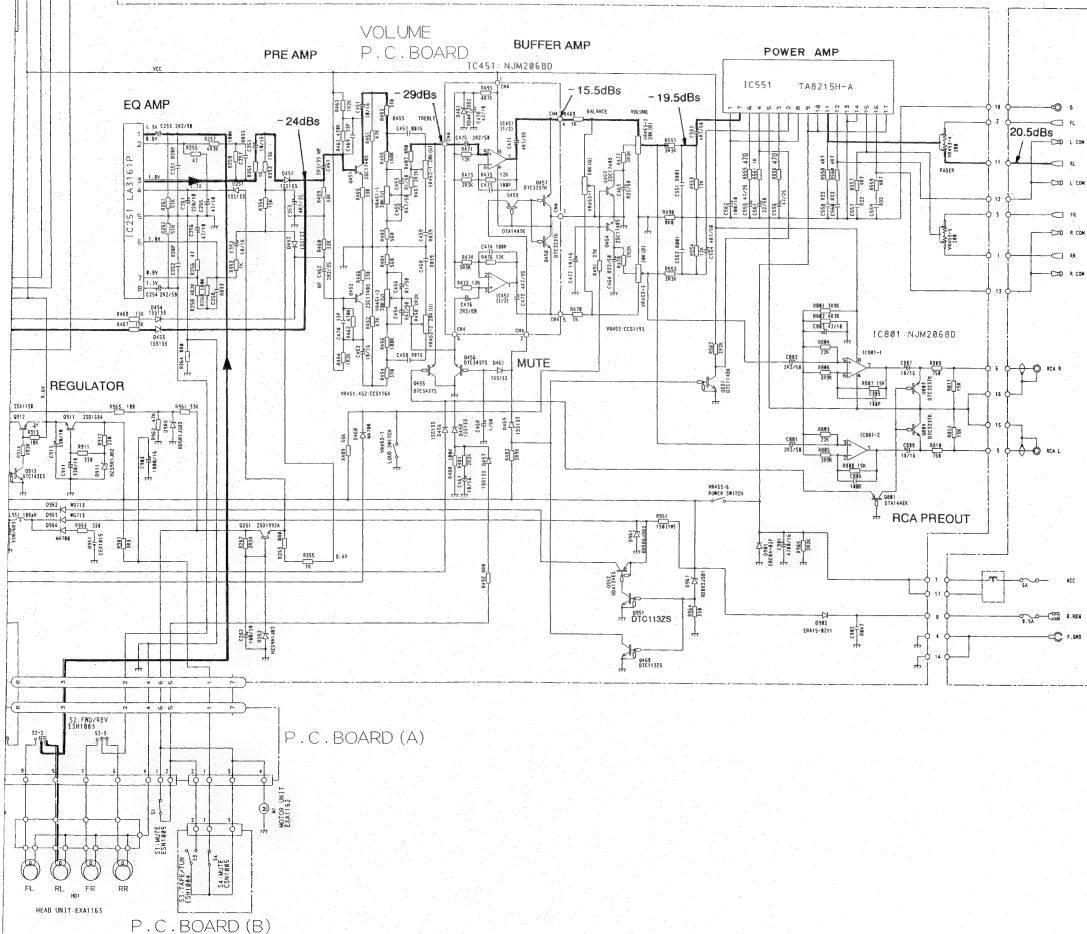
NOTE

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- |— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

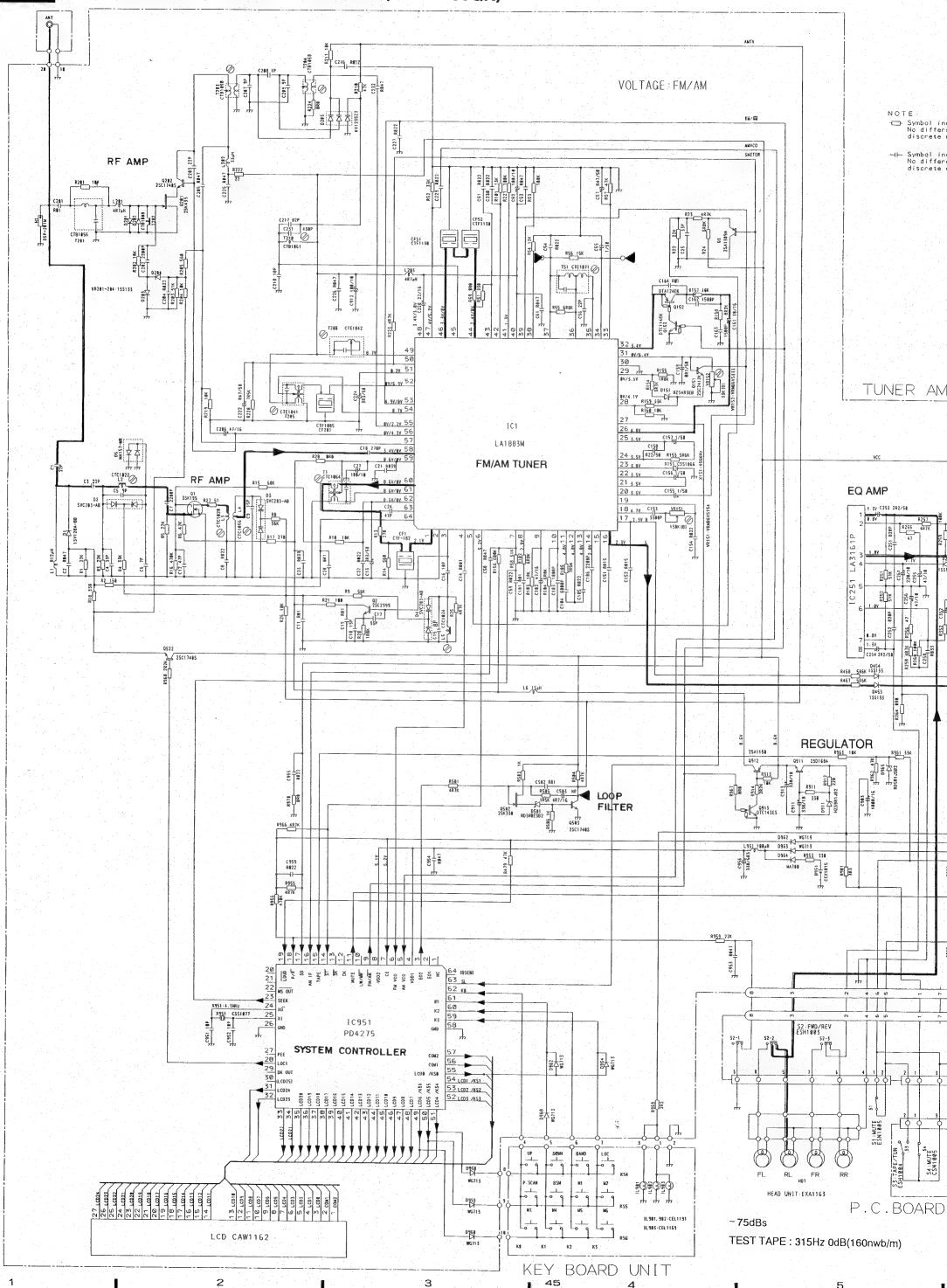
Decimal points for resistor and capacitor fixed values are expressed as:
2-2-2R2
0-022-0022

TUNER AMP UNIT	
Consists of	
●	TUNER AMP P.C. BOARD
●	VOLUME P.C. BOARD

TUNER AMP P.C. BOARD



-75dBs
TEST TAPE : 315Hz,0dB(160nwb/m)



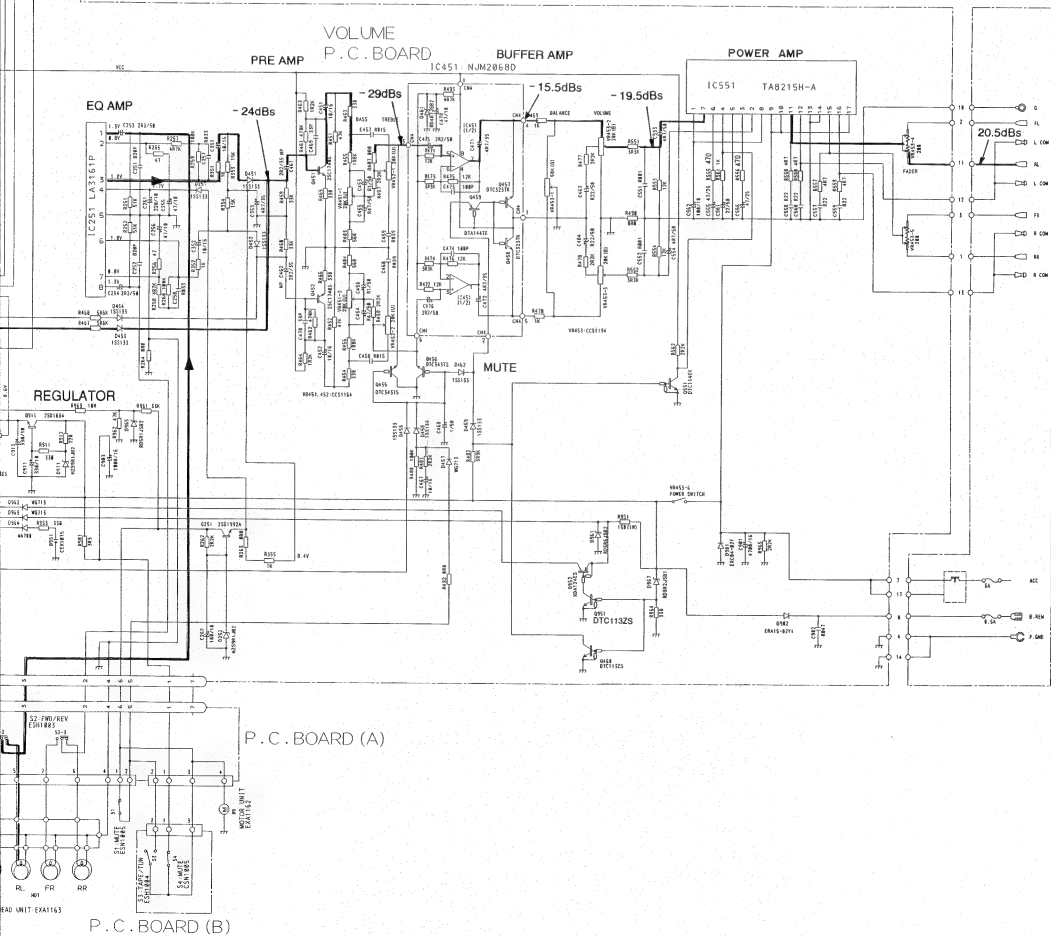
NOTE

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-0R22

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD

TUNER AMP P.C. BOARD



APF: 315Hz 0dB(160nwb/m)

15. CONNECTION DIAGRAM (KEH-2250QR)

TUNER AMP P.C. BOARD

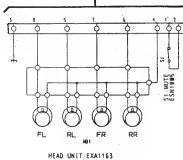
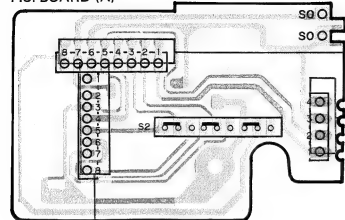
A

B

C

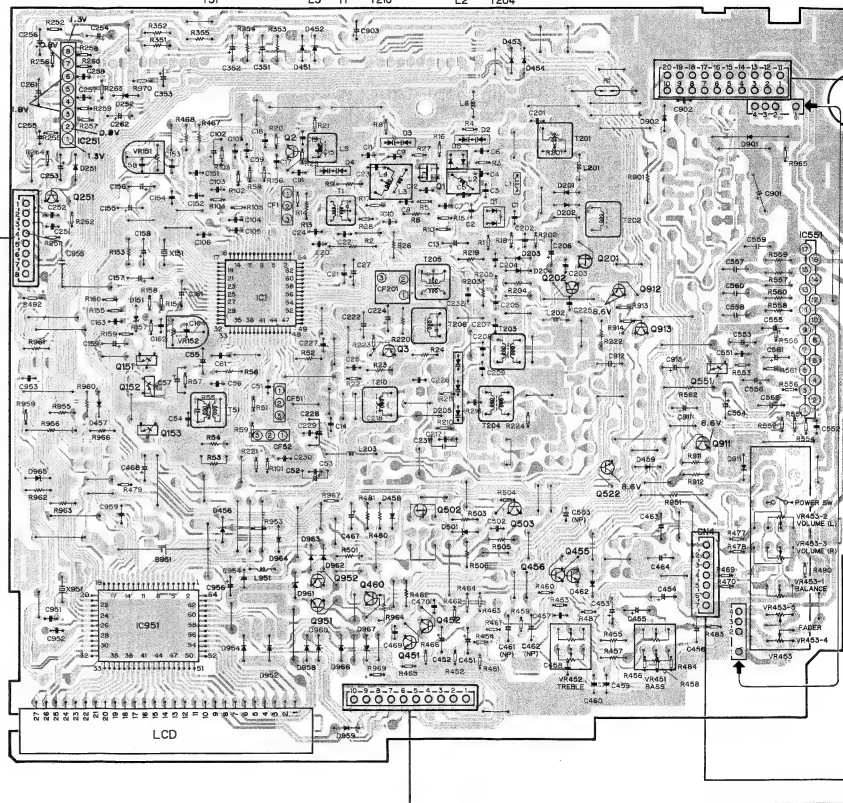
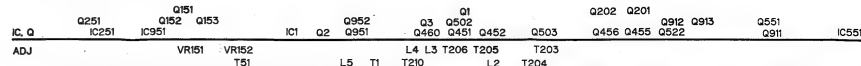
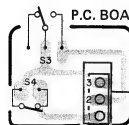
D

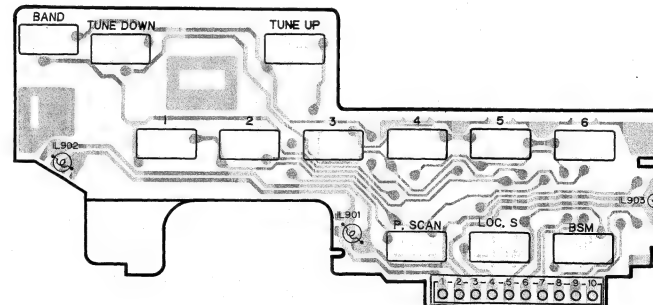
P.C. BOARD (A)

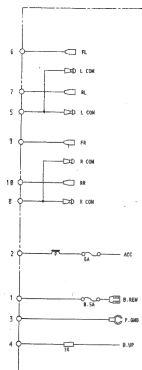


HEAD UNIT EX1153

P.C. BOARD (B)







PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1: 3V
6	2.4V/0V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11 - 13	4.8V	47	4V/5.2V
14	2.8V	51	0.2V
16, 17	2.3V	52	0V/6.9V
18	4.7V	53	4.9V/0V
20 - 22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59 - 62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		

IC, Q	Q457	IC451 Q459	Q458
-------	------	---------------	------

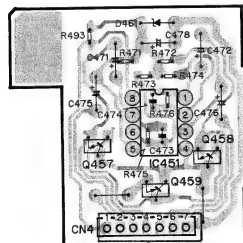
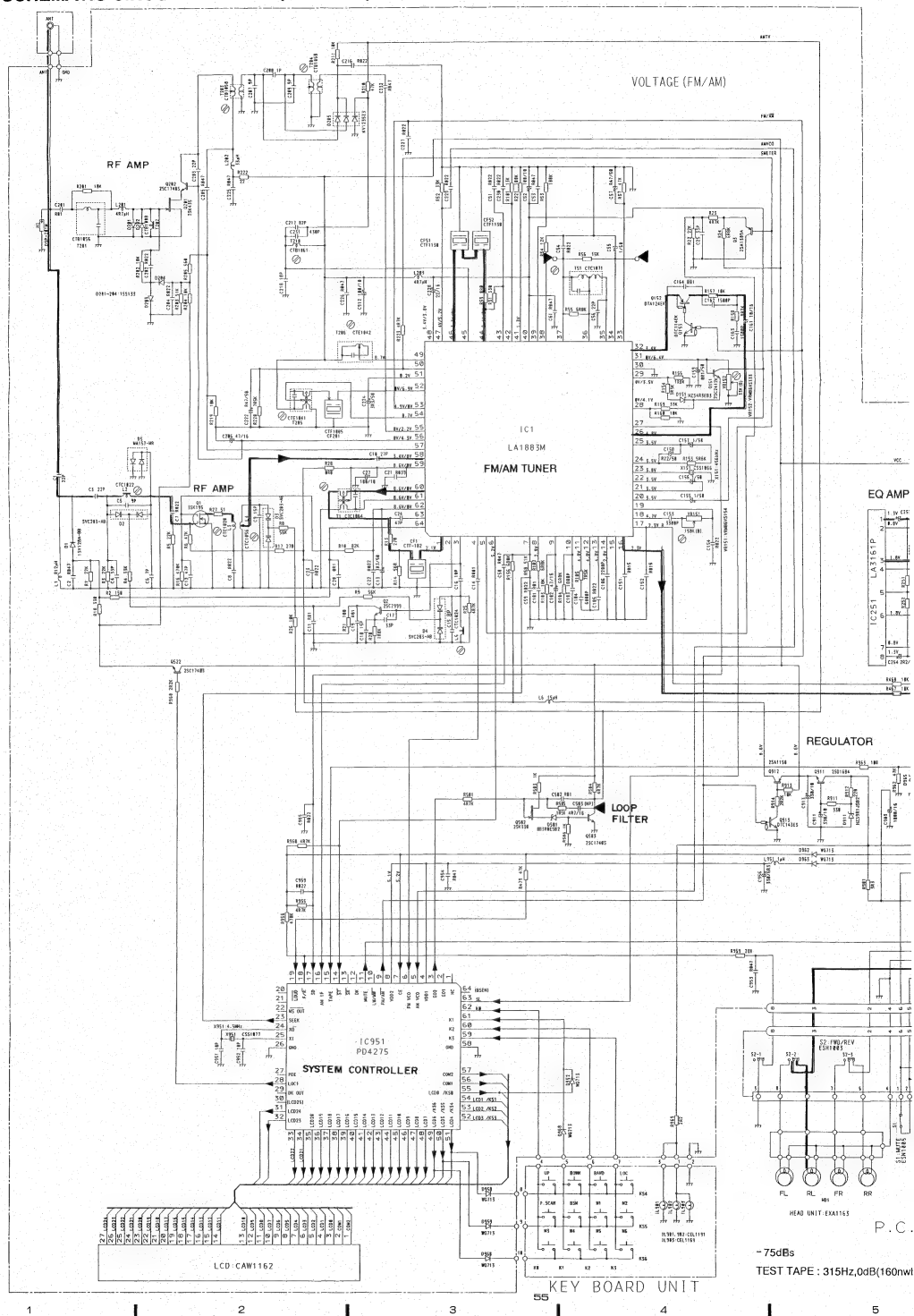


Fig. 18

17. SCHEMATIC CIRCUIT DIAGRAM (KEH-1250)



-75dBs

TEST TAPE : 315Hz,0dB(160rwl)

NOTE

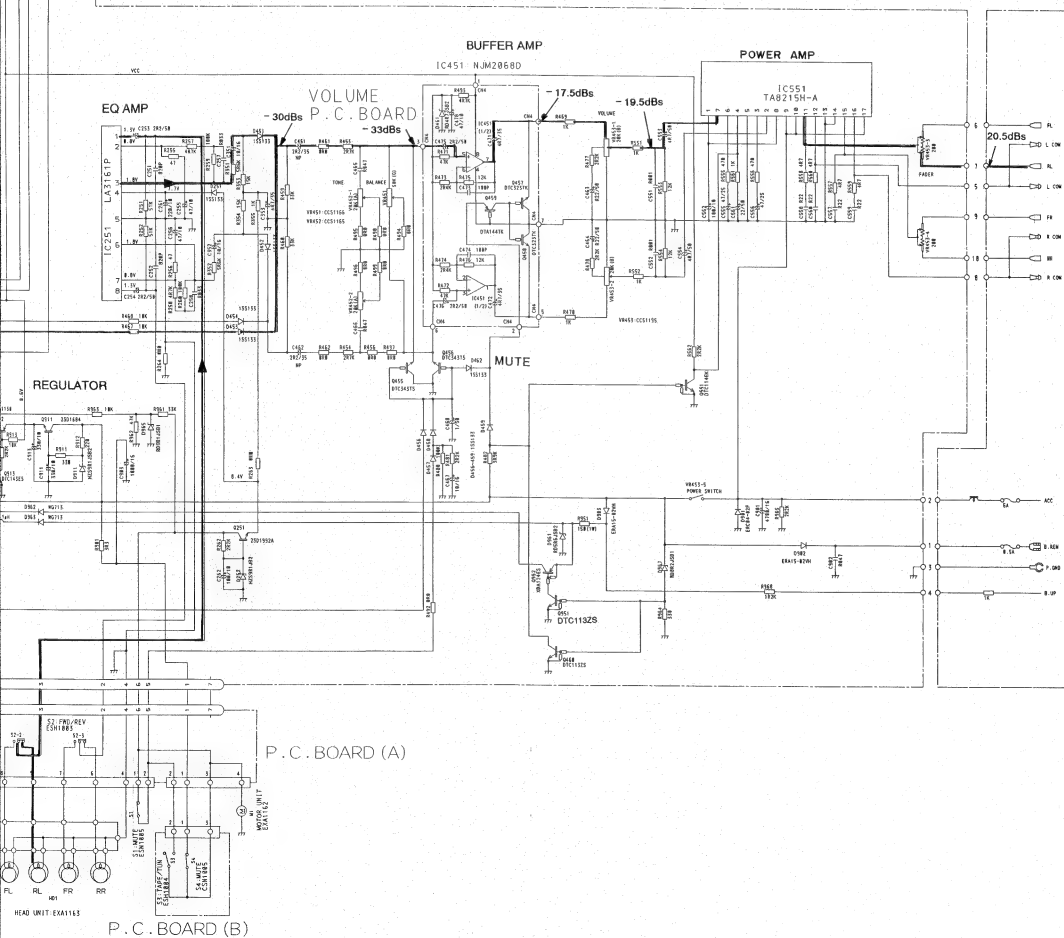
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

—||— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2=2R2
0.02=0022

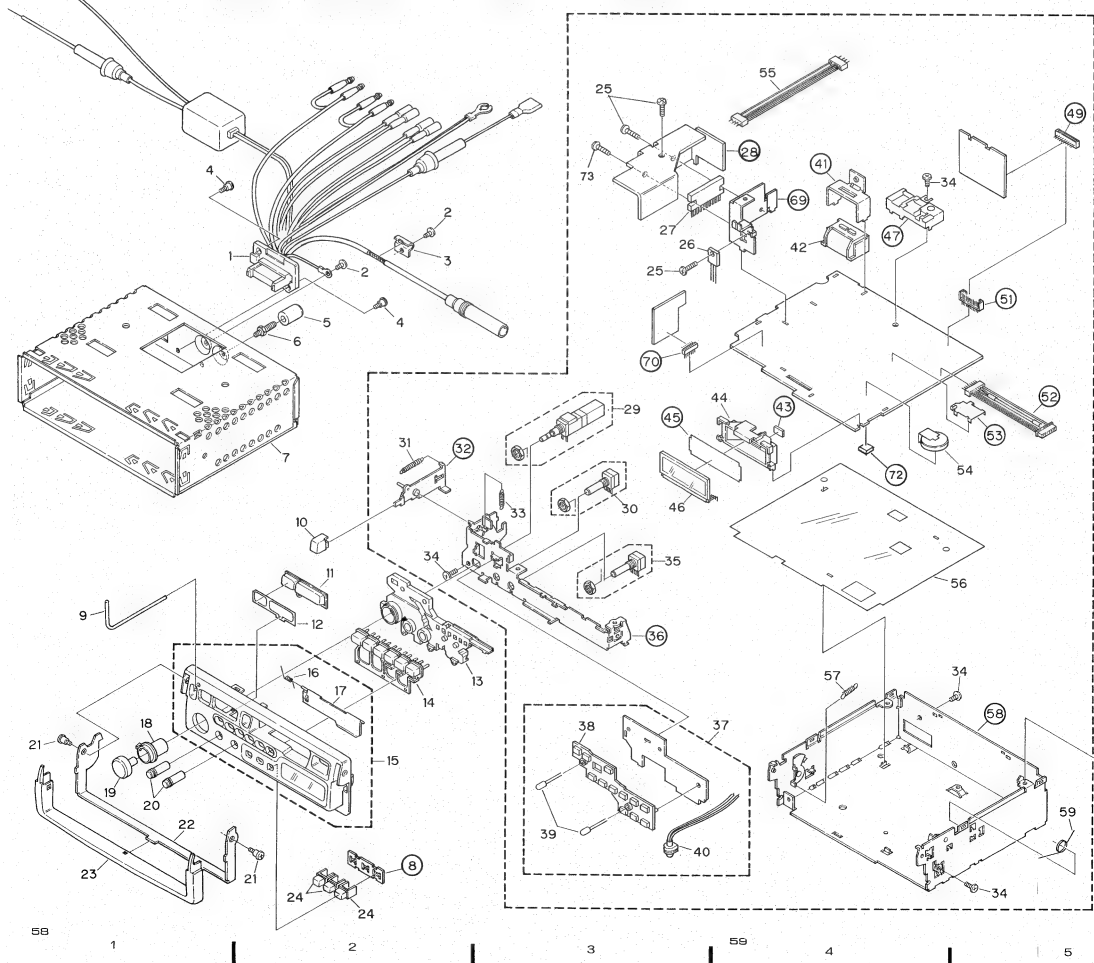
TUNER AMP UNIT
Consists of
▲ VOLUME P.C. BOARD
● TUNER AMP P.C. BOARD

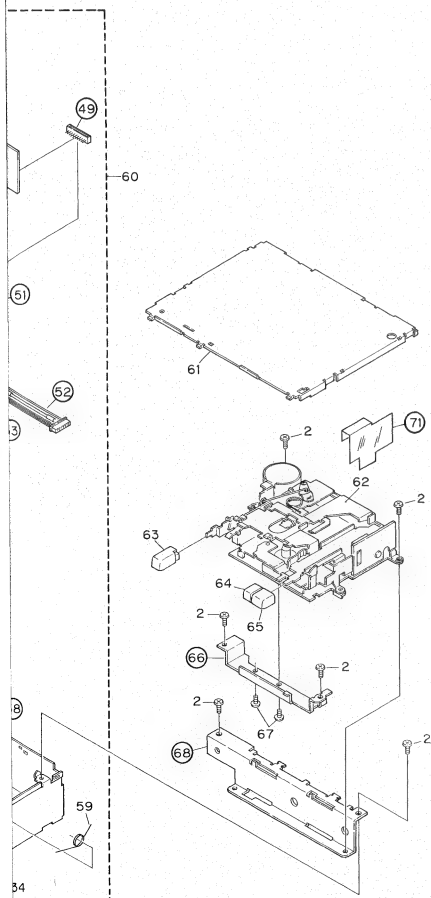
TUNER AMP P.C. BOARD



dBs
T TAPE : 315Hz,0dB(160nwb/m)

18. EXPLODED VIEW
(KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR)





NOTE:

- The parts marked with "※" may need long time to supply and their supply is subject to refuse as the case may be.
- Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.

● Parts List (KEH-3200QR/UC)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE3432	38	Switch	CNV2519
2	Screw	BS230P060PMC	39	Lamp (IL 901,902)	CEL1191
3	Clamper	CNC2982	40	Lamp (IL 903)	CEL1169
4	Screw	CBA1073	41	Holder	CNC3260
5	Bush	CNV1009	42	Connector	CKS1977
6	Screw	CBA1002	43	Spacer	CNM2914
7	Box	CNB1553	44	Holder	CNV2521
8	Cushion	CNM3180	45	Plate	CNM3285
9	Shaft	CLP1064	46	LCD	CAW1162
10	Button (QR EJECT)	CAC2548	47	Case	CNC3276
11	Button (BAND/TUNE)	CAC2544	48	.....
12	Spacer	CNM3275	49	Connector	CKS1997
13	Lens	CNV3024	50	.....
14	Button (1-6)	CAC2693	51	Plug	CKS1986
15	Grille Unit	CXA4459	52	Connector	CDE2884
16	Spring	CBH1397	53	Shield	CNC3275
17	Door	CAT1429	54	Battery (B 951)	CEX1015
18	Knob (FADER)	CAA1233	55	Connector	CDE3527
19	Knob (VOLUME)	CAA1234	56	Insulator	CNM3153
20	Knob (BASS/TREBLE)	CAA1235	57	Spring	CBH1447
21	Screw	CBA1165	58	Chassis Unit	CXA4426
22	Handle	CNC4007	59	Spring	CBH1366
23	Cover	CNV3022	60	Tuner Amp Assy	CWM2903
24	Button	CAC3097	61	Case	CNB1576
25	Screw	BS230P120PMC	62	Cassette Mechanism Assy	EXK1720
26	Transistor (Q 911)	2SD1684	63	Button (EJECT)	CAC2545
27	IC (IC 551)	TA8215H-A	64	Button (REW)	CAC2547
28	Heat Sink	CNC3896	65	Button (FF)	CAC2546
29	Volume (VOLUME, VR453)	CCS1193	66	Bracket	CNC3265
30	Volume (BASS, VR451)	CCS1164	67	Screw	BS226P060PMC
31	Spring	CBH1448	68	Bracket	CNC3264
32	Lever Unit	CXA4523	69	Holder	CNC3897
33	Spring	CBH-846	70	Plug	CKS1616
34	Screw	BS230P055PUC	71	Insulator	CNM3036
35	Volume (TREBLE, VR452)	CCS1164	72	Spacer	CNN-625
36	Holder Unit	CXA3709	73	Screw	BS230P100PMC
37	Key Board Unit	CWM2930			

Fig. 20

- The KEH-3250QR/ES, KEH-2200QR/UC and KEH-2250QR/ES Parts Lists enumerate the parts which differ from those enumerated in the KEH-3200QR/UC Parts List only.

The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.

The KEH-3200QR/UC Parts List is given on page 56.

Mark No. Description	KEH-3200QR/UC	KEH-3250QR/ES	KEH-2200QR/UC	KEH-2250QR/ES
	Part No.	Part No.	Part No.	Part No.
14 Button(1-6)	CAC2693	CAC2692	CAC2670	CAC2670
15 Grille Unit	CXA4459	CXA4460	CXA4464	CXA4465
17 Door	CAT1429	CAT1404	CAT1429	CAT1404
29 Volume(VOLUME, VR453)	CCS1193	CCS1193	CCS1193	CCS1194
49 Connector	CKS1997	CKS1997	.....	.....
51 Plug	CKS1986	CKS1986	.....	.....
52 Connector	CDE2884	CDE2884	CDE3064	CDE3064
● 60 Tuner Amp Assy	CWM2903	CWM2904	CWM2909	CWM2910
61 Case	CNB1576	CNB1552	CNB1576	CNB1552
● 62 Cassette Mechanism Assy	EXK1720	EXK1720	EXK1710	EXK1710

19. EXPLODED VIEW (KEH-1250)

• Parts List (KEH-1250/BS)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE3167	43	Spacer	CNM2914
2	Screw	BSZ30P060FMC	44	Holder	CNV2521
3	Holder	CNC2913	45	Plate	CNM3285
4-7	.....		46	LCD	CAW1162
8	Cushion	CNM3180	47	Case	CNC3276
9	Resistor	RS1/2P102JL	48	Antenna Cable	CDH1115
10	Cap	CNS1472	49	.....
11	Button (BAND/TUNE)	CAC2544	50	Plug	CKS1222
12	Spacer	CNM3275	51	.....
13	Lens	CNV3024	52	Connector	CDE3064
14	Button (1-6)	CAC2670	53	Shield	CNC3275
15	Grille Unit	CXA4466	54	.....
16	Spring	CBH1397	55	Connector	CDE3527
17	Door	CAT1404	56	Insulator	CNM3154
18	Knob (FADER)	CAA1233	57	.....
19	Knob (VOLUME)	CAA1234	58	Chassis	CNA1397
20	Knob (TONE/BALANCE)	CAA1235	59	.....
21-23	.....		60	Tuner Amp Assy	CWM2911
24	Button	CAC3097	61	Case	CNB1588
25	Screw	BSZ30P120FMC	62	Cassette Mechanism Assy	EXK1710
26	Transistor (Q 911)	ZSD1684	63	Button (EJECT)	CAC2545
27	IC (IC 551)	TAB215H-A	64	Button (REW)	CAC2547
28	Heat Sink	CNC3896	65	Button (FF)	CAC2546
29	Volume (VOLUME, VR453)	CCS1195	66	Bracket	CNC3265
30	Volume (TONE, VR451)	CCS1166			
31-33	.....		67	Screw	BSZ26P060FMC
34	Screw	BSZ30P055FUC	68	Bracket	CNC3264
35	Volume (BALANCE, VR452)	CCS1165	69	Holder	CNC3897
36	Holder	CNC3895	70	Plug	CKS1616
37	Key Board Unit	CWM2930	71	Insulator	CNM3036
38	Switch	CNV2519	72	Spacer	CNN-625
39	Lamp (1L 901, 902)	CEL1191	73	Screw	BSZ30P100FMC
40	Lamp (1L 903)	CEL1169	74	Spacer	CNM3356
41	Holder	CNC4040	75	Spacer	CNM3357
42	Connector	CKS-467	76	Spacer	CNM3358

● Exploded View

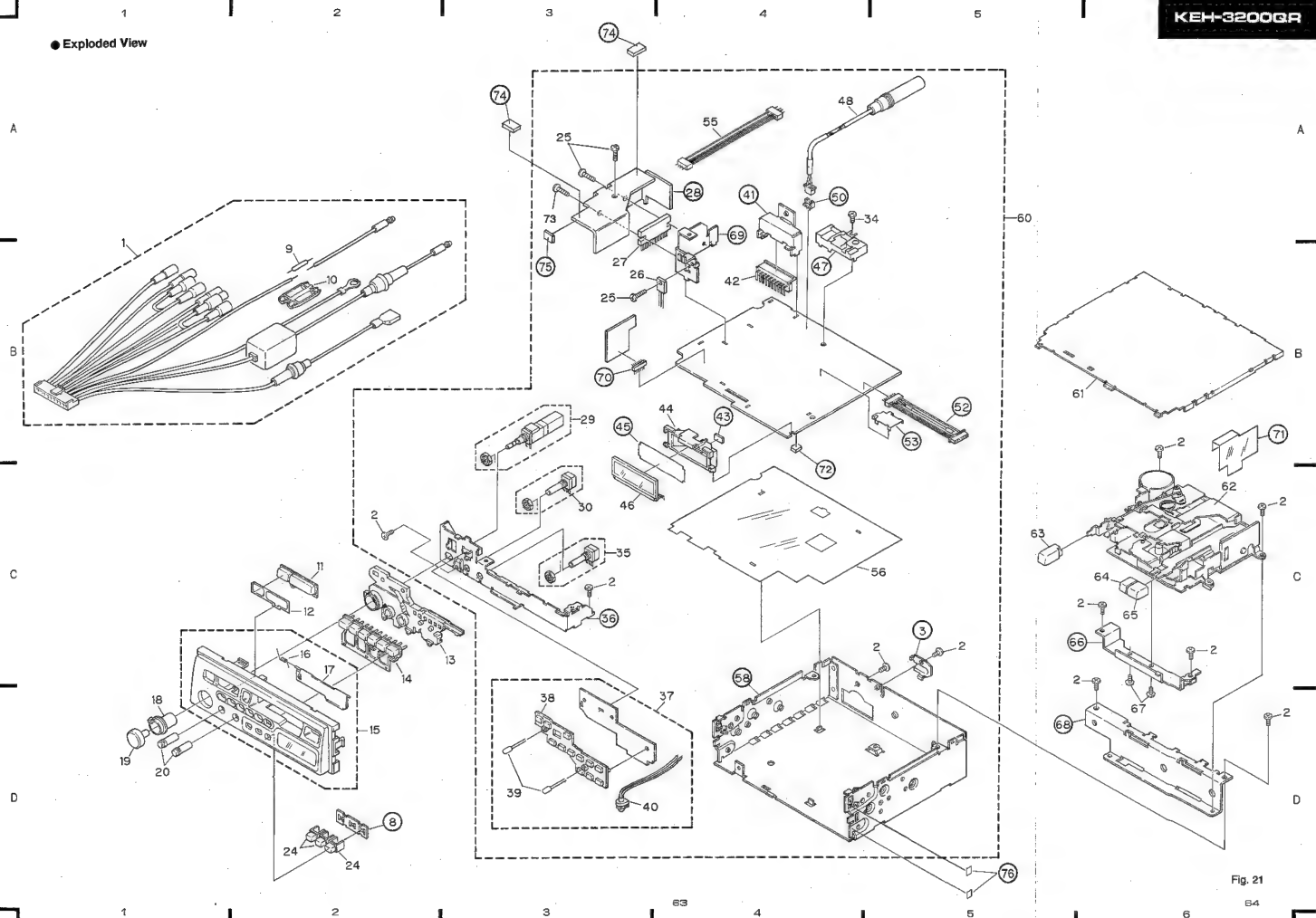


Fig. 21

20. CASSETTE MECHANISM ASSY EXPLODED VIEW (KEH-3200QR, KEH-3250QR)

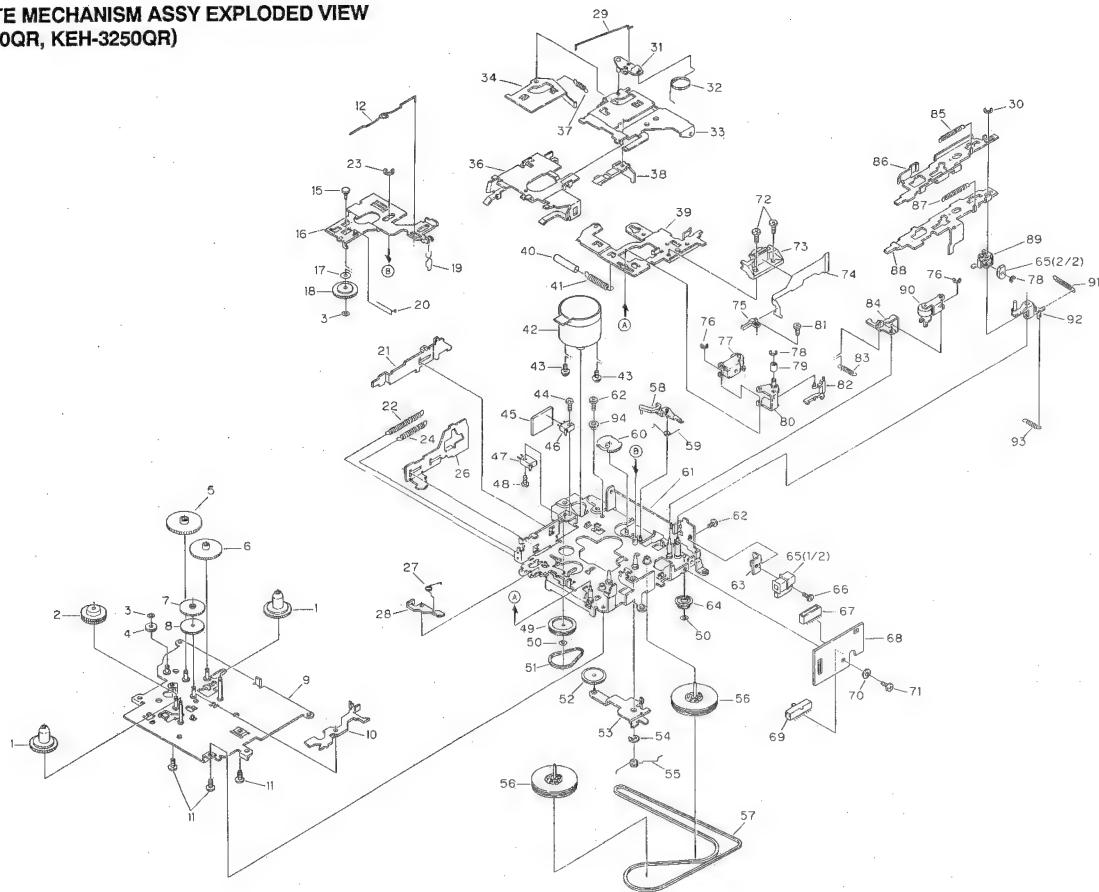


Fig. 22

•Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Reel Unit	EXA1204	41	Spring	EBH1363	81	Screw	CBA1038
2	Gear Unit	EXA1200	42	Motor Unit	EXA1162	82	Arm	ENV1227
3	Washer	CBF1037	43	Screw	PMS26P025FUC	83	Spring	EBH1368
4	Gear	ENV1230	44	Screw	CBA1054	84	Arm	ENC1266
5	Gear	ENV1203	45	Gathering P.C. Board	ENX1005	85	Spring	EBH1322
6	Gear	ENV1204	46	Switch	ESH1004	86	Lever	ENC1228
7	Gear	ENV1273	47	Switch	CSN1005	87	Spring	EBH1365
8	Gear	ENV1211	48	Screw	CBA1025	88	Lever	ENC1229
9	Sub Chassis Unit	EXA1197	49	Gear	ENV1229	89	Arm Unit	EXA1158
10	Arm	ENV1210	50	Washer	CBF1038	90	Pinch Roller Unit	EXA1193
11	Screw	BM220P025PMC	51	Belt	ENT1020	91	Spring	EBH1375
12	Spring	EBH1366	52	Gear	ENV1209	92	Arm Unit	EXA1157
13	.....		53	Arm Unit	EXA1155	93	Spring	EBH1345
14	.....		54	Washer	YE30PUC	94	Collar	ELA1267
15	Shaft	ELA1266	55	Spring	EBH1310			
16	Lever	ENC1269	56	Flywheel Unit	EXA1161			
17	Washer	EBF1015	57	Belt	ENT1018			
18	Gear	ENV1208	58	Arm	ENV1206			
19	Spring	EBH1361	59	Spring	EBH1317			
20	Spring	EBH1362	60	Gear	ENV1205			
21	Lever	ENC1255	61	Chassis Unit	EXA1196			
22	Spring	EBH1359	62	Screw	JP220P025FNI			
23	Washer	YE25FUC	63	Bracket	ENC1250			
24	Spring	EBH1358	64	Pulley	ENV1207			
25	.....		65	Solenoid	EXP1010			
26	Lever	ENC1256	66	Screw	EBA1023			
27	Spring	EBH1373	67	Plug	CKS1055			
28	Arm	ENC1248	68	Gathering P.C. Board	ENX1004			
29	Spring	EBH1308	69	Switch	ESH1003			
30	Washer	YE15FUC	70	Washer	WH23PMC			
31	Arm Unit	EXA1198	71	Screw	BS223P040PMC			
32	Spring	EBH1374	72	Screw	CBA1015			
33	Frame	ENC1204	73	Head Unit	EXA1163			
34	Arm	ENC1263	74	P.C. Board	ENP1042			
35	.....		75	Switch	ESN1005			
36	Holder	ENC1257	76	Washer	YE20FUC			
37	Spring	EBH1364	77	Pinch Roller Unit	EXA1194			
38	Lever	ENV1222	78	Washer	YE12FUC			
39	Head Base Unit	EXA1203	79	Roller	ELA1247			
40	Tube		80	Arm Unit	EXA1166			

21. CASSETTE MECHANISM ASSY EXPLODED VIEW (KEH-2200QR, KEH-2250QR, KEH-1250)

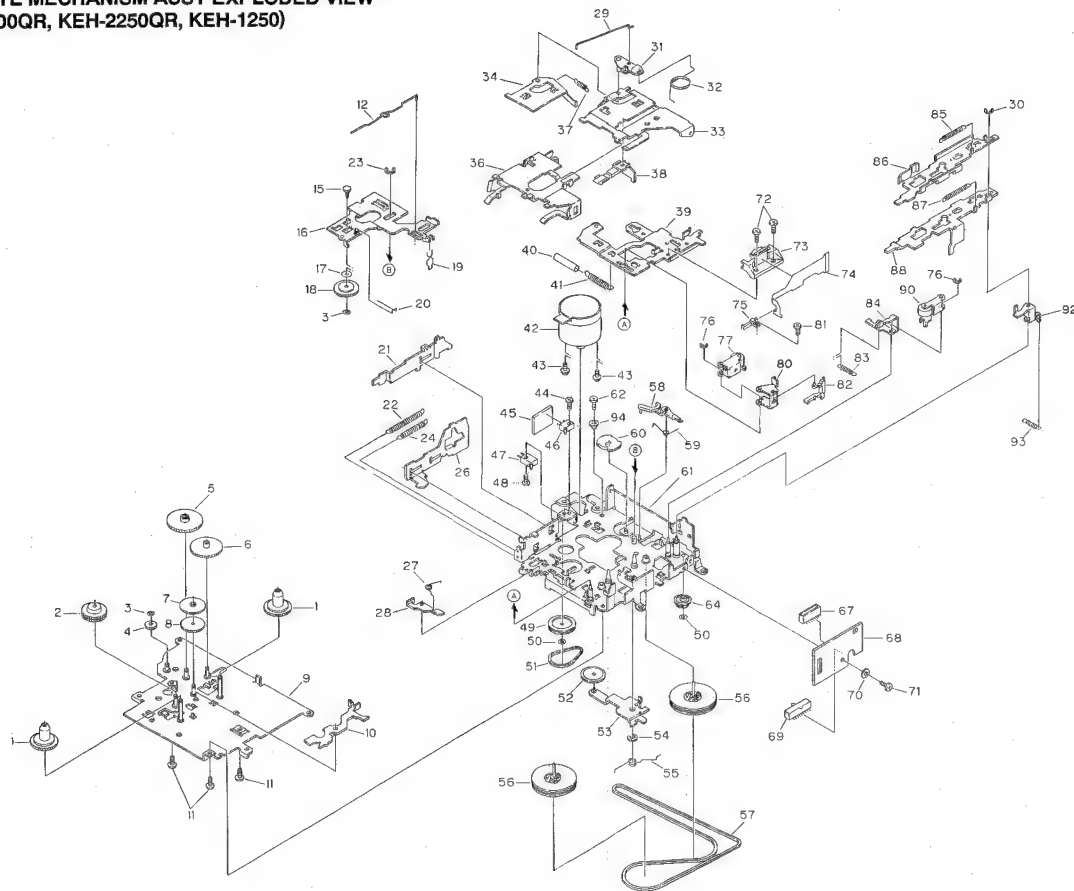


Fig. 23

•Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Reel Unit	EXA1104	41	Spring	EBH1363
2	Gear Unit	EXA1200	42	Motor Unit	EXA1162
3	Washer	CBF1037	43	Screw	PMS26P025FUC
4	Gear	ENV1230	44	Screw	CBA1054
5	Gear	ENV1203	45	Gathering P.C. Board	ENX1005
6	Gear	ENV1204	46	Switch	ESH1004
7	Gear	ENV1273	47	Switch	CSN1005
8	Gear	ENV1211	48	Screw	CBA1025
9	Sub Chassis Unit	EXA1197	49	Gear	ENV1229
10	Arm	ENV1210	50	Washer	CBF1038
11	Screw	BMZ20P025PMC	51	Belt	ENT1020
12	Spring	EBH1366	52	Gear	ENV1209
13	.....		53	Arm Unit	EXA1155
14	.....		54	Washer	YE30FUC
15	Shaft	ELA1266	55	Spring	EBH1310
16	Lever	ENC1269	56	Plywheel Unit	EXA1161
17	Washer	EBF1015	57	Belt	ENT1018
18	Gear	ENV1208	58	Arm	ENV1206
19	Spring	EBH1361	59	Spring	EBH1317
20	Spring	EBH1362	60	Gear	ENV1205
21	Lever	ENC1255	61	Chassis Unit	EXA1196
22	Spring	EBH1359	62	Screw	JFZ20P025PNI
23	Washer	YE25FUC	63	.....
24	Spring	EBH1358	64	Pulley	ENV1207
25	.....		65	.....
26	Lever	ENC1256	66	.....
27	Spring	EBH1373	67	Plug	CXS1055
28	Arm	ENC1248	68	Gathering P.C. Board	ENX1004
29	Spring	EBH1308	69	Switch	ESH1003
30	Washer	YE15FUC	70	Washer	WH23PMC
31	Arm Unit	EXA1198	71	Screw	BSZ23P040PMC
32	Spring	EBH1374	72	Screw	CBA1015
33	Frame	ENC1204	73	Head Unit	EXA1163
34	Arm	ENC1263	74	P.C. Board	ENP1042
35	.....		75	Switch	ESN1005
36	Holder	ENC1257	76	Washer	YE20FUC
37	Spring	EBH1364	77	Pinch Roller Unit	EXA1194
38	Lever	ENV1222	78	.....
39	Head Base Unit	EXA1203	79	.....
40	Tube		80	Arm	ENC1213

Mark No.	Description	Part No.
81	Screw	CBA1038
82	Arm	ENV1227
83	Spring	EBH1368
84	Arm	ENC1266
85	Spring	EBH1365
86	Lever	ENC1206
87	Spring	EBH1365
88	Lever	ENC1207
89	.....
90	Pinch Roller Unit	EXA1193
91	.....
92	Arm	ENC1264
93	Spring	EBH1367
94	Collar	ELA1267

22. PACKING METHOD

22.1 KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR

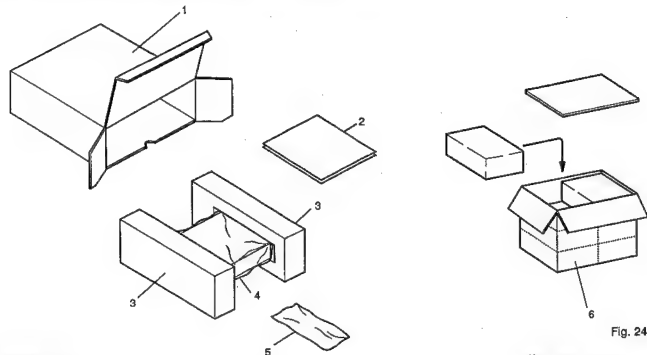


Fig. 24

● Parts List

*:Non spare part

Mark No.	Description	KEH-3200QR/UC	KEH-3250QR/ES	KEH-2200QR/UC	KEH-2250QR/ES
		Part No.	Part No.	Part No.	Part No.
1	Carton	CHG2110	CHG2112	CHG2111	CHG2113
2-1	Owner's Manual	CRD1534	CRD1535	CRD1534	CRD1535
2-2	Owner's Manual	CRB1238	.....	CRB1238	.....
* 2-3	Card	ARY1048	CRY-062	ARY1048	CRY-062
3	Styrofoam	CHP1413	CHP1413	CHP1413	CHP1413
4	Cover	CEG1113	CEG1113	CEG1113	CEG1113
5	Accessory Assy	CEA1584	CEA1584	CEA1584	CEA1584
6	Contain Box	CHL2110	* CHL2112	CHL2111	* CHL2113

5 Accessory Assy CEA1584		
Mark No.	Description	Part No.
5-1	Screw(×1)	CBA-102
5-2	Screw(×1)	CBA1002
5-3	Strap	CNF-111
5-4	Bush	CNV1009
5-5	Nut(×2)	NF50FMC
5-6	Shaft	CLP1064
* 5-7	Polyethylene Bag	CEG1011

2-1 Owner's Manual

Part No.	Model	Language
CRD1534	KEH-3200QR/UC KEH-2200QR/UC	English, French
CRD1535	KEH-3250QR/ES KEH-2250QR/ES	English, French, Spanish, Arabic
CRB1238	KEH-3200QR/UC KEH-2200QR/UC	Spanish

22.2 KEH-1250

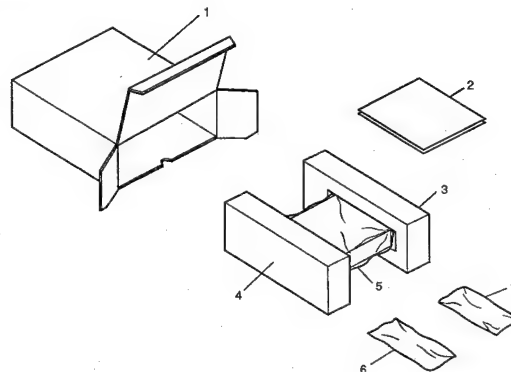


Fig. 25

● Parts List

*:Non spare part

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton	CHG2114	6-2-1	Screw(×4)	BMZ40P080FMC
2	Owner's Manual (English, French, Spanish, Arabic)	CRD1536	6-2-2	Screw(×4)	BMZ50P080FMC
3	Styrofoam	CHP1275	6-2-3	Screw(×4)	CHMZ50P080FMC
			6-2-4	Screw(×1)	HMF40P080FUC
			* 6-2-5	Polyethylene Bag	CEG-127
4	Styrofoam	CHP1276	* 6-3	Polyethylene Bag	E36-615
5	Cover	CEG1113	7	Cord Assy	CDE3167
6	Accessory Assy	CEA1320			
6-1	Cord	CRB1289			
* 6-2	Screw Assy	CEA1361			

23. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/8S□□□□, RS1/10S□□□□

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

● KEH-3200QR/UC, KEH-3250QR/ES

Tuner Amp Unit
Consists of
Tuner Amp P.C.Board
Volume P.C.Board
Dolby NR P.C.Board

Unit Number :

Unit Name : Tuner Amp Unit(KEH-3200QR/UC)

MISCELLANEOUS

Circuit Symbol & No.	Part Name	Part No.
IC 1	LA1883M	
IC 2	CWW1116	
IC 251	LA3161P	
IC 301	CXA1102P	
IC 401	AN6263N	
IC 451	NJM2068D	
IC 551	TA8215H-A	
IC 801	NJM2068D	
IC 951	PD4275	
Q 1	3SK195	
Q 2	2SC2999	
Q 3	2SA1308A	
Q 151	2SC2412K	
Q 152	DTA124EK	
Q 153	DTC114EK	
Q 201	2SK435	
Q 202	2SC1740S	
Q 251	2SD1992A	
Q 301 401 402	XDC124ES	
Q 303 304 451 452 453 454	2SC1740S	
Q 455 456	DTC343TS	
Q 457 458	DTC323TK	
Q 459	DTA144TK	
Q 460	DTC113ZS	
Q 502	2SK330	
Q 503 522	2SC1740S	
Q 551	DTC114EK	
Q 801	DTA144EK	
Q 803 804	DTC323TK	
Q 911	2SD1684	
Q 912	2SA1150	
Q 913	DTC143ES	
Q 951	DTC113ZS	
Q 952	XDA124ES	
D 1	1SV128A-B9	

Circuit Symbol & No.	Part Name	Part No.
D 2 3 4	Variable Capacitance	Diode
D 5		
D 151		
D 201 202 203 204	Variable Capacitance	Diode
D 205		
D 251		
D 252 911		
D 451 452 453 454 456 458 459 462		
D 457		
D 460		
D 461		
D 501		
D 901		
D 902		
D 954 956 957 958 959		
D 960 962 963		
D 961		
D 964		
D 965		
D 967		
L 1	Inductor	
L 2	Coil	
L 3	Coil	
L 4	Coil	
L 5	OSC Coil	
L 6	Inductor	
L 201	Ferrit-Inductor	
L 202	Ferrit-Inductor	
L 203	Ferrit-Inductor	
L 951	Ferrit-Inductor	
T 1	Coil	
T 51	Coil	
T 201	Coil	
T 202	Coil	
T 203 204	Coil	
T 205	Coil	
T 206	Coil	
T 210	Coil	
CF 1	Ceramic Filter	
CF 51 52	Ceramic Filter	
CF201	Filter	
H 1	Surge Protector	
X 151	Ceramic Resonator	
X 951	Crystal Resonator	
VR151	Semi-fixed 150K(Ω)	

SVC203-AB

MA157-MR

HZS9R1JB2

1SS133

KV1235Z3

1SS133

HZS9R1JB2

1SS133

WG713

MA700

RD4R7JSB2

RD3R0ESB2

ERC04-02F

ERA15-02Y1

WG713

WG713

RD5R6JSB2

MA700

RD5R1JSB2

RD8R2JSB1

CTF1065

CTC1022

CTC1020

CTC1056

CTC1024

LAU150K

LAU4R7K

LAU330K

CTF-161

LAU101K

CTC1064

CTC1071

CTB1056

CTB1056

CTB1056

CTE1041

CTE1042

CTB1061

CTF-182

CTF1130

CTF1085

DSP-201M

CSS1066

CSS1077

VRMB6VS154

Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
VR152	Semi-fixed 33kΩ(B)	VRMB6VS333	R 262		RS1/10S222J
VR301 302	Semi-fixed 33kΩ(B)	VRMB6VS333	R 263		RS1/8S0R0J
VR451 452	Volume 20kΩ(U)	CCS1164	R 264		RS1/10S0R0J
VR453	Volume/Switch 20kΩ(B), 50kΩ(G), 200Ω	CCS1193	R 302		RS1/10S433J
B 951	Battery	CEX1015	R 303 304		RD1/4PS433JL
	LCD	CAW1162	R 305 306		RD1/4PS153JL
			R 307		RS1/10S473J
			R 308		RD1/4PS472JL
			R 310		RS1/10S221J
			R 311 312		RD1/4PS272JL
RESISTORS					
R 1 3 5		RS1/10S223J	R 313 314		RS1/10S332J
R 2		RD1/4PS151JL	R 315 316		RS1/10S104J
R 4 159		RS1/10S333J	R 401 402		RS1/10S822J
R 6		RD1/4PS473JL	R 403		RS1/10S684J
R 8		RS1/10S563J	R 404		RS1/10S510J
R 9		RD1/4PS563JL	R 405		RD1/4PS103JL
R 10 157 160		RS1/10S103J	R 407		RS1/10S0R0J
R 13		RD1/4PS271JL	R 451 452 479		RS1/10S473J
R 14		RS1/10S561J	R 453 454 465 466		RS1/10S331J
R 15		RS1/10S683J	R 455		RD1/4PS182JL
R 16		RS1/10S474J	R 456		RS1/10S182J
R 17		RS1/8S271J	R 457		RD1/4PS222JL
R 18 51		RS1/10S331J	R 458 477 478		RS1/10S222J
R 20 155		RS1/10S182J	R 459 460		RS1/10S333J
R 21		RS1/10S101J	R 461 462		RS1/10S474J
R 22		RS1/10S153J	R 463 464		RS1/8S122J
R 23		RD1/4PS223JL	R 467 468		RD1/4PS153JL
R 24		RD1/4PS682JL	R 469 470		RS1/10S102J
R 25		RD1/10S472J	R 471 472 475 476		RS1/10S123J
R 26		RD1/4PS103JL	R 473 474		RS1/10S332J
R 27		RS1/10S510J	R 480		RD1/4PS104JL
R 28 59		RS1/10S0R0J	R 481		RD1/4PS222JL
R 52		RD1/4PS333JL	R 482		RD1/4PS362JL
R 53		RD1/4PS104JL	R 483 484		RS1/10S561J
R 54		RD1/4PS123JL	R 487		RS1/10S0R0J
R 55 102 104		RS1/10S682J	R 489		RS1/10S563J
R 56		RD1/4PS562JL	R 490		RS1/10S0R0J
R 57		RS1/10S473J	R 491		RS1/10S273J
R 58		RS1/10S513J	R 492		RS1/8S0R0J
R 101		RS1/10S133J	R 493		RS1/10S472J
R 103		RS1/10S183J	R 501 955 966		RD1/4PS472JL
R 105		RS1/10S752J	R 503 506		RD1/4PS102JL
R 153		RD1/4PS662JL	R 504		RS1/10S472J
R 154		RS1/10S332J	R 505		RD1/4PS152JL
R 156		RS1/10S684J	R 551 552		RS1/10S332J
R 158		RS1/10S622J	R 553 554		RS1/10S123J
R 201 202 211		RS1/10S103J	R 555 556		RS1/10S471J
R 203		RD1/4PS813JL	R 557 558 559 560		RD1/4PS487JL
R 204 219		RD1/4PS103JL	R 561		RS1/10S102J
R 205		RS1/10S561J	R 562		RD1/4PS222JL
R 210		RS1/10S473J	R 801 805 806		RS1/10S392J
R 220		RD1/4PS752JL	R 802		RS1/10S472J
R 221		RS1/10S104J	R 803 804		RS1/10S223J
R 222		RD1/4PS223JL	R 807 808 811 812		RS1/10S153J
R 223		RS1/10S472J	R 809 810		RS1/10S751J
R 224		RS1/10S0R0J	R 901		RD1/2PS3R3JL
R 251 252		RS1/10S513J	R 911 964		RD1/4PS331JL
R 255 256		RS1/10S470J	R 912		RD1/4PS221JL
R 257 258		RS1/10S472J	R 913		RS1/10S103J
R 259 260		RS1/10S104J	R 914 965		RS1/10S222J

Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
R 951	RS1P151JL	C 224	CEA3R3M50LS		
R 953	RS1/10S31J	C 225 232	CKSQYB473K25		
R 956	RD1/4PS474JL	C 228	CEA220M16LS		
R 959	RS1/10S223J	C 231	CQPA431G2A		
R 960	RD1/4PS222JL	C 251 252	CKSQYB821K50		
R 961	RD1/4PS333JL	C 253 254	CEA2R2M50LS2		
R 962	RD1/4PS473JL	C 255	CEA470M10LS		
R 963	RD1/4PS103JL	C 256	CEA470M10L2		
R 967	RS1/10S0R0J	C 257 259	CKSQYB333K50		
R 969	RS1/10S2R2J	C 261	CEA221M10L2		
R 970	RS1/8S0R0J	C 262	CEA101M10L2		
CAPACITORS		C 301 302 303 304	CEA4R7M35LS		
		C 305 306	CEAR68M50LS2		
		C 307 308	CEA101M10LS		
		C 310	CEA100M16LS2		
C 1 3 56	CCSQCH220J50	C 311 312	CKSQYB223K50		
C 2 53 58	CKSQYF473Z50	C 401	CKSQYB103K50		
C 4 25	CCSQCH330J50	C 402	CCSQCH330J50		
C 5	CCSQTH090D50	C 403	CEA330M10LS		
C 6	CCSQTH070D50	C 404	CEADR1M50LS2		
C 7	CKSQYB222K50	C 451 452 467 477	CEA100M16LS2		
C 8 22 51 54 59 105 154	CKSQYB223K50	C 453 454	CEADR1M50LS2		
C 9	CCSQTH160J50	C 455 456	CEAR47M35LS2		
C 10	CCSQSL271J50	C 457 458	CKSQYB153K50		
C 11 19 101 164	CKSQYB103K50	C 459 460	CKSQYB393K25		
C 12 24	CCSQCH470J50	C 461 462	CEALNP2R2M35		
C 13	CEA3R3M50LS	C 463 464	CEAR22M50L2		
C 14	CKSQYB102K50	C 468	CEA010M50LS2		
C 15	CCSQCH080D50	C 469 470	CCSQCH330J50		
C 16	CCSQCH100D50	C 471 472	CEA4R7M35LS		
C 17	CCSQCH330J50	C 473 474	CCSQCH101J50		
C 18	CCSQCH150J50	C 475 476	CEA2R2M50LS2		
C 20	CKSQYF104Z25	C 478	CEA470M10L2		
C 21	CKSQYB393K25	C 502	CKSQYB103K50		
C 23	CKSQYB393K25	C 503	CCH1005		
C 27 52	CEA101M10LS	C 551 552	CKSQYB102K50		
C 55	CEA010M50LS2	C 553 554	CEHAQ4R7M50		
C 57	CEAR47M50LS2	C 555 556	CEHAQ470M25		
C 61	CKSQYB473K50	C 557 558 559 560	CFTNA224J50		
C 102	CEA470M16LS	C 561	CEHAQ220M50		
C 103	CKSQYB182K50	C 562	CEHAQ101M10		
C 104	CKSQYB682K50	C 901 802	CEA2R2M50LS2		
C 106	CKSQYB222K50	C 903	CEA470M10L2		
C 151 152	CKSQYB223K50	C 905 906	CCSQCH101J50		
C 153	CKSQYB332K50	C 907 908	CEA100M16LS2		
C 155 156 157	CEA010M50LS2	C 901	CEHAQ472M16		
C 158	CEAR22M50LS2	C 902	CKSQYF473Z50		
C 159	CEADR1M50LS2	C 903	CEA102M16L2		
C 161	CEA100M16LS2	C 911 913	CCH1128		
C 162 163	CKSQYB152K50	C 912	CEA101M10LS		
C 201	CKSQYB103K50	C 951 952	CCSQCH100D50		
C 202	CKSQYB222K50	C 953	CKSQYF473Z50		
C 203	CCSQCH220J50	C 954	CKSQYB473K50		
C 204 216 227 229 230	CKSQYB223K50	C 955	CKDYF223Z50		
C 205 226	CKSQYF473Z50	C 956	CEA331M6R9L2		
C 206	CEA470M16LS	C 959	CKSQYB223K50		
C 207 209	CCSQTH090D50				
C 208	CCSQCH010C90				
C 217	CCSQRH820J50				
C 218	CCSQW180J50				
C 222	CEAR47M50LS2				

Unit Number :
Unit Name : Key Board Unit

Circuit Symbol	&No.	Part Name	Part No.
IL 901 902		Lamp14V40mA	CEL1191
IL 903		Lamp14V40mA	CEL1189

Unit Number :
Unit Name : P.C.Board(A)

Circuit Symbol	& No.	Part Name	Part No.
S 2		Switch(FWD/REV)	ESH1003
D 1			1SR-35-100A

Unit Number :
Unit Name : P.C.Board(B)

Circuit Symbol	& No.	Part Name	Part No.
S 3		Switch(TAPE/TUN)	ESH1004
S 4		Switch(MUTE)	CSN1005

Miscellaneous Parts List

Circuit Symbol	& No.	Part Name	Part No.
S 1		Switch(MUTE)	ESN1005
M 1		Motor Unit	EXA1182
HD 1		Head Unit	EXA1163
SO 1		Solenoid	EXP1010

Tuner Amp Unit

Circuit Symbol & No.		Part No.	Part No.
IC2		KEH-3200QR/UC	KEH-3250QR/ES
D952,968		.....	WG713
D954		WG713	.....
R22		RS1/10S153J	RS1/10S223J
R23		RD1/4PS223JL	RD1/4PS472JL
R56		RD1/4PS562JL	RD1/4PS153JL
R467,468		RD1/4PS153JL	RD1/4PS562JL
C151,152		CKSQYB223K50	CKSQYB153J50

●KEH-2200QR/UC/KEH-2250QR/ES

Tuner Amp Unit
Consists of
Tuner Amp P.C.Board
Volume P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit(KEH-2200QR/UC)

MISCELLANEOUS

Circuit Symbol & No.	Part Name	Part No.
IC 1	LA1883M	
IC 251	LA3161P	
IC 451	NJM2068D	
IC 551	TA8215H-A	
IC 801	NJM2068D	
IC 951	PD4275	
Q 1	3SK195	
Q 2	2SC2999	
Q 3	2SA1309A	
Q 151	2SC2412K	
Q 152	DTA124EK	
Q 153	DTCT114EK	
Q 201	2SK435	
Q 202	2SC1740S	
Q 251	2SD1992A	
Q 451 452	2SC1740S	
Q 453 454	2SC1740S	
Q 455 456	DTC343TS	
Q 457 458	DTC323TK	
Q 459	DTA144TK	
Q 460	DTC113ZS	
Q 502	2SK330	
Q 503 522	2SC1740S	
Q 551	DTCT114EK	
Q 801	DTA144EK	
Q 803 804	DTC323TK	
Q 911	2SD1684	
Q 912	2SA1150	
Q 913	DTC143ES	
Q 951	DTC113ZS	
Q 952	XDA124ES	
D 1	1SV128A-BB	
D 2 3 4	Variable Capacitance Diode	
D 5	SVC203-AB	
D 151	MA157-MR	
D 201 202 203 204	HZS4R3EB3	
	1S5133	
D 205	Variable Capacitance Diode	
D 251	KV1235Z3	
D 252 911	1S5133	
D 451 452 453 454 455 456 457 458 459 462	HZS9R1JB2	
D 457	1S5133	
D 460	MA700	
D 461	RD4R7JSB2	
D 501	RD3R0ESB2	
D 901	ERC04-02F	
D 902	ERA15-02Y1	
D 954	WG713	
D 958 959 960 962 963	WG713	
D 961	RD5R9JSB2	
D 964	MA700	
D 965	RD5R1JSB2	

Circuit Symbol & No.	Part Name	Part No.
D 967		RD8R2JSB1
L 1	Inductor	CTF1085
L 2	Coil	CTC1022
L 3	Coil	CTC1020
L 4	Coil	CTC1058
L 5	OSC Coil	CTC1024
L 6	Inductor	LAU150K
L 201	Ferrit-Inductor	LAU4R7K
L 202	Ferrit-Inductor	LAU330K
L 203	Ferrit-Inductor	CTF-161
L 951	Ferrit-Inductor	LAU101K
T 1	Coil	CTC1064
T 51	Coil	CTC1071
T 201	Coil	CTB1056
T 202	Coil	CTB1008
T 203 204	Coil	CTB1058
T 205	Coil	CTE1041
T 206	Coil	CTE1042
T 210	Coil	CTB1061
CF 1	Ceramic Filter	CTF-182
CF 51 52	Ceramic Filter	CTF1130
CF201	Filter	CTF1085
H 1	Surge Protector	DSP-201M
X 151	Ceramic Resonator	CS1066
X 951	Crystal Resonator	CS1077
VR151	Semi-fixed 150kΩ (B)	VRMB6VS154
VR152	Semi-fixed 33kΩ (B)	VRMB6VS333
VR451 452	Volume 20kΩ (U)	CCS1164
VR453	Volume/Switch 20kΩ (B), 50kΩ (G), 200Ω	CCS1193
B 951	Battery	CEX1015
	LCD	CAW1162

RESISTORS

Circuit Symbol & No.	Part Name	Part No.
R 1 3 5		RS1/10S223J
R 2		RD1/4PS151JL
R 4 159		RS1/10S333J
R 6		RD1/4PS473JL
R 8		RS1/10S583J
R 9		RD1/4PS563JL
R 10 157 160		RS1/10S103J
R 13		RD1/4PS271JL
R 14		RS1/10S561J
R 15		RS1/10S683J
R 16		RS1/10S474J
R 17		RS1/8S271J
R 18 51		RS1/10S313J
R 20 155		RS1/10S182J
R 21		RS1/10S101J
R 22		RS1/10S223J
R 23		RD1/4PS472JL
R 24		RD1/4PS662JL
R 25		RS1/10S472J
R 26		RD1/4PS103JL
R 27		RS1/10S510J
R 28 59		RS1/10S0R0J
R 52		RD1/4PS333JL
R 53		RD1/4PS104JL
R 54		RD1/4PS123JL

Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
R 55 102 104	RS1/10S662J	RS1/10S662J	R 557 558 559 560	RD1/4PS4R7JL	RD1/4PS4R7JL
R 56	RD1/4PS562JL	RD1/4PS562JL	R 581	RS1/10S102J	RS1/10S102J
R 57	RS1/10S473J	RS1/10S473J	R 582	RD1/4PS222JL	RD1/4PS222JL
R 58	RS1/10S513J	RS1/10S513J	R 801 805 806	RS1/10S362J	RS1/10S362J
R 101	RS1/10S133J	RS1/10S133J	R 802	RS1/10S472J	RS1/10S472J
R 103	RS1/10S183J	RS1/10S183J	R 803 804	RS1/10S223J	RS1/10S223J
R 121	RS1/10S752J	RS1/10S752J	R 807 808 811 812	RS1/10S153J	RS1/10S153J
R 153	RD1/4PS562JL	RD1/4PS562JL	R 809 810	RS1/10S751J	RS1/10S751J
R 154	RS1/10S332J	RS1/10S332J	R 901	RD1/2PS3R3JL	RD1/2PS3R3JL
R 156	RS1/10S684J	RS1/10S684J	R 911 964	RD1/4PS331JL	RD1/4PS331JL
R 158	RS1/10S822J	RS1/10S822J	R 912	RD1/4PS221JL	RD1/4PS221JL
R 201 202 211	RS1/10S103J	RS1/10S103J	R 913	RD1/10PS103J	RD1/10PS103J
R 203	RD1/4PS513JL	RD1/4PS513JL	R 914 965	RS1/10S222J	RS1/10S222J
R 204 219	RD1/4PS103JL	RD1/4PS103JL	R 951	RS1P151JL	RS1P151JL
R 205	RS1/10S561J	RS1/10S561J	R 953	RS1/10S331J	RS1/10S331J
R 210	RS1/10S473J	RS1/10S473J	R 956	RD1/4PS474JL	RD1/4PS474JL
R 220	RD1/4PS752JL	RD1/4PS752JL	R 959	RS1/10S223J	RS1/10S223J
R 221	RS1/10S104J	RS1/10S104J	R 960	RD1/4PS222JL	RD1/4PS222JL
R 222	RD1/4PS2220JL	RD1/4PS2220JL	R 961	RD1/4PS333JL	RD1/4PS333JL
R 223	RS1/10S472J	RS1/10S472J	R 962	RD1/4PS473JL	RD1/4PS473JL
R 224	RS1/10S0R0J	RS1/10S0R0J	R 963	RD1/4PS103JL	RD1/4PS103JL
R 251 252	RS1/10S513J	RS1/10S513J	R 967	RS1/10S0R0J	RS1/10S0R0J
R 255 256	RS1/10S470J	RS1/10S470J	R 969	RS1/10S2R2J	RS1/10S2R2J
R 257 258	RS1/10S472J	RS1/10S472J	R 970	RS1/8S0R0J	RS1/8S0R0J
R 259 260	RS1/10S104J	RS1/10S104J			
R 262	RS1/10S222J	RS1/10S222J			
R 263	RS1/8S0R0J	RS1/8S0R0J			
R 264	RS1/10S0R0J	RS1/10S0R0J			
R 351 352 355	RD1/4PS102JL	RD1/4PS102JL	C 1 3 56	CCSQCH220J50	CCSQCH220J50
R 353 354	RD1/4PS153JL	RD1/4PS153JL	C 2 53 58	CKSQYF47Z250	CKSQYF47Z250
R 451 452 479	RS1/10S473J	RS1/10S473J	C 4 25	CCSQCH330J50	CCSQCH330J50
R 453 454 465 466	RS1/10S331J	RS1/10S331J	C 5	CCSQTH090D50	CCSQTH090D50
R 455	RD1/4PS182JL	RD1/4PS182JL	C 6	CCSQTH070D50	CCSQTH070D50
R 456	RS1/10S182J	RS1/10S182J	C 7	CKSQYB222K50	CKSQYB222K50
R 457	RD1/4PS222JL	RD1/4PS222JL	C 8 22 51 54 59 105 154	CKSQYB223K50	CKSQYB223K50
R 458 477 478	RS1/10S222J	RS1/10S222J	C 9	CCSQTH150J50	CCSQTH150J50
R 459 460	RS1/10S333J	RS1/10S333J	C 10	CCSQSL271J50	CCSQSL271J50
R 461 462	RS1/10S474J	RS1/10S474J	C 11 19 101 164	CKSQYB103K50	CKSQYB103K50
R 463 464	RS1/8S122J	RS1/8S122J	C 12 24	CCSQCH470J50	CCSQCH470J50
R 467 468	RD1/4PS153JL	RD1/4PS153JL	C 13	CEA3R3M50LS	CEA3R3M50LS
R 469 470	RS1/10S102J	RS1/10S102J	C 14	CKSQYB102K50	CKSQYB102K50
R 471 472 475 476	RS1/10S123J	RS1/10S123J	C 15	CCSQCH080D50	CCSQCH080D50
R 473 474	RS1/10S332J	RS1/10S332J	C 16	CCSQCH100D50	CCSQCH100D50
R 480	RD1/4PS104JL	RD1/4PS104JL	C 17	CCSQCH330J50	CCSQCH330J50
R 481	RD1/4PS222JL	RD1/4PS222JL	C 18	CCSQCH150J50	CCSQCH150J50
R 482	RD1/4PS382JL	RD1/4PS382JL	C 20	CKSQYF104Z25	CKSQYF104Z25
R 483 484	RS1/10S561J	RS1/10S561J	C 21 23	CKSQYB383K25	CKSQYB383K25
R 487	RS1/10S0R0J	RS1/10S0R0J	C 27 52	CEA101M10LS	CEA101M10LS
R 489	RS1/10S563J	RS1/10S563J	C 55	CEA010M50LS2	CEA010M50LS2
R 490	RS1/10S0R0J	RS1/10S0R0J	C 57	CEA4R7M50LS2	CEA4R7M50LS2
R 491	RS1/10S273J	RS1/10S273J	C 81	CKSQYB473K50	CKSQYB473K50
R 492	RS1/8S0R0J	RS1/8S0R0J	C 102	CEA470M16LS	CEA470M16LS
R 493	RS1/10S472J	RS1/10S472J	C 103	CKSQYB182K50	CKSQYB182K50
R 501 955 966	RD1/4PS472JL	RD1/4PS472JL	C 104	CKSQYB682K50	CKSQYB682K50
R 503 506	RD1/4PS102JL	RD1/4PS102JL	C 106	CKSQYB222K50	CKSQYB222K50
R 504	RS1/10S472J	RS1/10S472J	C 151 152	CKSQYB223K50	CKSQYB223K50
R 505	RD1/4PS152JL	RD1/4PS152JL	C 153	CKSQYB332K50	CKSQYB332K50
R 551 552	RS1/10S332J	RS1/10S332J	C 155 156 157	CEA010M50LS2	CEA010M50LS2
R 553 554	RS1/10S123J	RS1/10S123J	C 158	CEA22M50LS2	CEA22M50LS2
R 555 556	RS1/10S471J	RS1/10S471J	C 159	CEA0R1M50LS2	CEA0R1M50LS2
			C 161	CEA100M16LS2	CEA100M16LS2
			C 162 163	CKSQYB152K50	CKSQYB152K50
			C 201	CKSQYB103K50	CKSQYB103K50
			C 202	CKSQYB222K50	CKSQYB222K50

CAPACITORS

Circuit Symbol & No.	Part Name	Part No.
C 1 3 56	CCSQCH220J50	CCSQCH220J50
C 2 53 58	CKSQYF47Z250	CKSQYF47Z250
C 4 25	CCSQCH330J50	CCSQCH330J50
C 5	CCSQTH090D50	CCSQTH090D50
C 6	CCSQTH070D50	CCSQTH070D50
C 7	CKSQYB222K50	CKSQYB222K50
C 8 22 51 54 59 105 154	CKSQYB223K50	CKSQYB223K50
C 9	CCSQTH150J50	CCSQTH150J50
C 10	CCSQSL271J50	CCSQSL271J50
C 11 19 101 164	CKSQYB103K50	CKSQYB103K50
C 12 24	CCSQCH470J50	CCSQCH470J50
C 13	CEA3R3M50LS	CEA3R3M50LS
C 14	CKSQYB102K50	CKSQYB102K50
C 15	CCSQCH080D50	CCSQCH080D50
C 16	CCSQCH100D50	CCSQCH100D50
C 17	CCSQCH330J50	CCSQCH330J50
C 18	CCSQCH150J50	CCSQCH150J50
C 20	CKSQYF104Z25	CKSQYF104Z25
C 21 23	CKSQYB383K25	CKSQYB383K25
C 27 52	CEA101M10LS	CEA101M10LS
C 55	CEA010M50LS2	CEA010M50LS2
C 57	CEA4R7M50LS2	CEA4R7M50LS2
C 81	CKSQYB473K50	CKSQYB473K50
C 102	CEA470M16LS	CEA470M16LS
C 103	CKSQYB182K50	CKSQYB182K50
C 104	CKSQYB682K50	CKSQYB682K50
C 106	CKSQYB222K50	CKSQYB222K50
C 151 152	CKSQYB223K50	CKSQYB223K50
C 153	CKSQYB332K50	CKSQYB332K50
C 155 156 157	CEA010M50LS2	CEA010M50LS2
C 158	CEA22M50LS2	CEA22M50LS2
C 159	CEA0R1M50LS2	CEA0R1M50LS2
C 161	CEA100M16LS2	CEA100M16LS2
C 162 163	CKSQYB152K50	CKSQYB152K50
C 201	CKSQYB103K50	CKSQYB103K50
C 202	CKSQYB222K50	CKSQYB222K50

Circuit Symbol	& No.	Part Name	Part No.
C 203		CCSQCH220J50	
C 204 216 227 229 230		CKSQYB223K50	
C 205 228		CKSQYF473Z50	
C 206		CEA470M16LS	
C 207 209		CCSQTH090D50	
C 208		CCSQCH010C50	
C 217		CCSQRH820J50	
C 218		CCSQJ180J50	
C 222		CEA47M50LS2	
C 224		CEA3R3M50LS	
C 225 232		CKSQYB473K25	
C 228		CEA220M16LS	
C 231		CQPA431G2A	
C 251 252		CKSQYB821K50	
C 253 254		CEA2R2M50LS2	
C 255		CEA470M10LS	
C 256		CEA470M10L2	
C 257 258		CKSQYB333K50	
C 261		CEA221M10L2	
C 262		CEA101M10L2	
C 351 352		CEA100M16L2	
C 353		CEA4R7M35L2	
C 451 452 457 477		CEA100M16LS2	
C 453 454		CEA0R1M50LS2	
C 455 456		CEA4R7M50LS2	
C 457 458		CKSQYB153K50	
C 459 460		CKSQYB393K25	
C 461 462		CEALNP2R2M35	
C 463 464		CEAR22M50L2	
C 468		CEA010M50LS2	
C 471 472		CEA4R7M35LS	
C 469 470		CCSQCH330J50	
C 473 474		CCSQCH101J50	
C 475 476		CEA2R2M50LS2	
C 478		CEA470M10L2	
C 502	4.7 μ F/16V	CKSQYB103K50	
C 503		CCH1005	
C 551 552		CKSQYB102K50	
C 553 554		CEHAQ4R7M50	
C 555 556		CEHAQ470M25	
C 557 558 559 560		CFTNA224J50	
C 561		CEHAQ220M50	
C 562		CEHAQ101M10	
C 601 802		CEA2R2M50LS2	
C 803		CEA470M10L2	
C 805 806		CCSQCH101J50	
C 807 808		CEA100M16LS2	
C 901		CEHAQ472M16	
C 902		CKSQYF473Z50	
C 903		CEA102M16L2	
C 911 913	330 μ F/10V	CCH1128	
C 912		CEA101M10LS	
C 951 952		CCSQCH100D50	
C 953		CKSQYF473Z50	
C 954		CKSQYB473K50	
C 955		CKDYF223Z50	
C 956		CEA331M6R3L2	
C 959		CKSQYB223K50	

Unit Number :
Unit Name : Key Board Unit

Circuit Symbol	& No.	Part Name	Part No.
IL 901 902		Lamp 14v40mA	CEL1191
IL 903		Lamp 14v40mA	CEL1169

Unit Number :
Unit Name : P.C.Board(A)

Circuit Symbol	& No.	Part Name	Part No.
S 2		Switch(FWD/REV)	ESH1003

Unit Number :
Unit Name : P.C.Board(B)

Circuit Symbol	& No.	Part Name	Part No.
S 3		Switch(TAPE/TUN)	ESH1004
S 4		Switch(MUTE)	CSN1005

Miscellaneous Parts List

Circuit Symbol	& No.	Part Name	Part No.
S 1		Switch(MUTE)	ESN1005
M 1		Motor Unit	EXA1162
HD 1		Head Unit	EXA1163

Tuner Amp Unit

	KEH-2200QR/UC	KEH-2250QR/ES
Circuit Symbol & No.	PartNo.	PartNo.
IC801	NJM2068D	.....
Q453,454	2SC1740S	.....
Q801	DTA144EK	.....
Q803,804	DTC323TK	.....
D457	1SS133	WG713
D460	MA700	.....
D952,968	.....	WG713
VR453	CCS1193	CCS1194
R56	RD1/4PS562JL	RD1/4PS153JL
R467,468	RD1/4PS153JL	RD1/4PS562JL
R469	RS1/10S563J	.....
R491	RS1/10S273J	.....
R801,805,806	RS1/10S392J	.....
R802	RS1/10S472J	.....
R803,804	RS1/10S223J	.....
R807,808,811,812	RS1/10S153J	.....
R809,810	RS1/10S751J	.....
C151,152	CKSQYB223K50	CKSQYB153K50
C477	CEA100M16LS2	.....
C801,802	CEA2R2M50LS2	.....
C803	CEA470M10L2	.....
C805,806	CCSQCH101J50	.....
C807,808	CEA100M16LS2	.....

●KEH-1250/ES

Tuner Amp Unit
Consists of Tuner Amp P.C.Board Volume P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol & No.	Part Name	Part No.
IC 1	LA1883M	
IC 251	LA3161P	
IC 451	NJM2068D	
IC 551	TA8215H-A	
IC 951	PD4275	
Q 1	3SK195	
Q 2	2SC2999	
Q 3	2SA1308A	
Q 151	2SC2412K	
Q 152	DTA124EK	
Q 153	DTC114EK	
Q 201	2SK435	
Q 202	2SC1740S	
Q 251	2SD1992A	
Q 455 456	DTC343TS	
Q 457 458	DTC323TK	
Q 459	DTA144TK	
Q 460	DTC113ZS	
Q 502	2SK330	
Q 503 522	2SC1740S	
Q 551	DTC114EK	
Q 911	2SD1684	
Q 912	2SA1150	
Q 913	DTC143ES	
Q 951	DTC113ZS	
Q 952	XDA124ES	
D 1	1SV128A-BB	
D 2 3 4	Variable Capacitance Diode	
D 5	SVC200-AB	
D 151	MA157-MR	
	HZS4R3EB3	
D 201 202 203 204	Variable Capacitance Diode	
D 205	1SS133	
D 251	KV1235Z3	
D 252 911	1SS133	
D 451 452 453 454 455 457 458 459 462	HZS9R1JB2	
	1SS133	
D 461	RD4R7JSB2	
D 501	RD3R0ESB2	
D 901	ERC04-02F	
D 902 903	ERA15-02VH	
D 952 968	WG713	
D 958 959 960 962 963	WG713	
D 961	RD5R6JSB2	
D 965	RD6R1JSB2	
D 967	RD8R2JSB1	
L 1	Inductor	CTF1065
L 2	Coil	CTC1022
L 3	Coil	CTC1020
L 4	Coil	CTC1056
L 5	OSC Coil	CTC1024
L 6	Inductor	LAU150K

Circuit Symbol & No.	Part Name	Part No.
L 201	Ferr-Inductor	LAU4R7K
L 202	Ferr-Inductor	LAU330K
L 203	Ferr-Inductor	CTF-161
L 951	Ferr-Inductor	LAU101K
T 1	Coil	CTC1064
T 51	Coil	CTC1071
T 201	Coil	CTB1056
T 202	Coil	CTB1008
T 203 204	Coil	CTB1058
T 205	Coil	CTE1041
T 206	Coil	CTE1042
T 210	Coil	CTB1061
CF 1	Ceramic Filter	CTF-182
CF 51 52	Ceramic Filter	CTF1130
CF201	Filter	CTF1085
H 1	Surge Protector	DSP-201M
X 151	Ceramic Resonator	CCS1066
X 951	Crystal Resonator	CCS1077
VR151	Semi-fixed 150kΩ (B)	VRMB6SV154
VR152	Semi-fixed 33kΩ (B)	VRMB6SV333
VR451	Volume 20kΩ (A)	CCS1166
VR452	Volume 50kΩ (G)	CCS1165
VR453	Volume/Switch 20kΩ (B), 200Ω LCD	CCS1195
		CAW1162

RESISTORS

Circuit Symbol & No.	Part Name	Part No.
R 1 3 5		RS1/10S223J
R 2		RD1/4PS151JL
R 4 159		RS1/10S333J
R 6		RD1/4PS473JL
R 8		RS1/10S563J
R 9		RD1/4PS563JL
R 10		RS1/10S823J
R 13		RD1/4PS271JL
R 14		RS1/10S561J
R 16		RS1/10S474J
R 17		RS1/8S271J
R 18 51		RS1/10S331J
R 20 155		RS1/10S182J
R 21		RS1/10S101J
R 22		RS1/10S223J
R 23		RD1/4PS472JL
R 24		RD1/4PS862JL
R 25		RS1/10S472J
R 26		RD1/4PS103JL
R 27		RS1/10S510J
R 28 59		RD1/10S0R6J
R 52		RD1/4PS333JL
R 53		RD1/4PS104JL
R 54		RD1/4PS123JL
R 55 102 104		RS1/10S662J
R 56		RD1/4PS153JL
R 57		RS1/10S473J
R 58		RS1/10S513J
R 101		RS1/10S133J
R 103		RS1/10S183J
R 105		RS1/10S752J
R 153		RD1/4PS562JL
R 154		RS1/10S332J
R 156		RS1/10S684J
R 157 160 201 202 211		RS1/10S103J

Circuit Symbol	No.	Part Name	Part No.	CAPACITORS	Circuit Symbol	No.	Part Name	Part No.
R 158			RS1/10S622J					
R 203			RD1/4PS13JL					
R 204 219			RD1/4PS103JL	C 1	3	56		CCSQCH220J50
R 205			RS1/10S561J	C 2	53	58		CKSQYF473Z50
R 210			RS1/10S473J	C 4	25			CCSQCH330J50
				C 5				CCSQTH090D50
				C 6				CCSQTH070D50
R 220			RD1/4PS752JL					
R 221			RS1/10S104J					
R 222			RD1/4PS220JL	C 7				CKSQYB222K50
R 223			RS1/10S472J	C 8	22	51 54 59 105 154		CKSQYB223K50
R 251 252			RS1/10S513J	C 9				CCSQTH150J50
				C 10				CCSQSL271J50
R 255 256			RS1/10S470J	C 11	19	101 164		CKSQYB103K50
R 257 258			RS1/10S472J					
R 259 260			RS1/10S104J	C 12	24			CCSQCH470J50
R 262			RS1/10S222J	C 13				CEA3R3M50L5
R 263			RS1/BS0R0J	C 14				CKSQYB102K50
				C 15				CCSQCH080D50
R 264			RS1/10S0R0J	C 16				CCSQCH100D50
R 351 352			RD1/4PS562JL	C 17				CCSQCH330J50
R 353 354			RD1/4PS153JL					
R 355			RD1/4PS102JL	C 18				CCSQCH150J50
R 453 454			RS1/10S272J	C 20				CKSQYF104Z25
				C 21				CKSYB30K25
R 456			RS1/10S0R0J	C 23				CKSQYB223K25
R 477 478			RS1/10S222J	C 27	52			CEA101M10L5
R 459 460			RS1/10S333J					
R 461 462			RS1/10S0R0J	C 55				CEA101M50L52
R 467 468			RD1/4PS103JL	C 57				CEAR47M50L52
				C 61				CKSYB473K50
R 469 470			RS1/10S102J	C 102				CEA470M16L5
R 471 472			RS1/10S473J	C 103				CKSQYB182K50
R 473 474			RS1/10S242J					
R 475 476			RS1/10S123J	C 104				CKSQYB682K50
R 479			RS1/10S473J	C 106				CKSQYB222K50
				C 151 152				CKSQYB153K50
R 480			RD1/4PS104JL	C 153				CKSQYB332K50
R 481			RD1/4PS222JL	C 155 156 157				CEA010M50L52
R 482			RD1/4PS392JL					
R 490			RS1/BS0R0J	C 158				CEAR22M50L52
R 492			RS1/BS0R0J	C 159				CEA0R1M50L52
				C 161				CEA100M16L52
R 493			RS1/10S472J	C 162 163				CKSQYB152K50
R 494 495 496 497 499			RS1/10S0R0J	C 201				CKSQYB103K50
R 501 955 966			RD1/4PS472JL					
R 503 506			RD1/4PS102JL	C 202				CKSQYB222K50
R 504			RS1/10S472J	C 203				CCSQCH220J50
				C 204 216 227 229 230				CKSQYB223K50
R 505			RD1/4PS152JL	C 205 226				CKSQYF473Z50
R 551 552			RS1/10S102J	C 206				CEA470M16L5
R 553 554			RS1/10S123J					
R 555 556			RS1/10S471J	C 207 209				CCSQTH090D50
R 557 558 559 560			RD1/4PS47JL	C 208				CCSQCH010C50
				C 217				CCSQRH820J50
R 561			RS1/10S102J	C 218				CCSQUJ180J50
R 562			RD1/4PS222JL	C 222				CEAR47M50L52
R 901			RD1/2PS3R3JL					
R 911 964			RD1/4PS331JL	C 224				CEA3R3M50L5
R 912			RD1/4PS221JL	C 225 232				CKSQYB473K25
				C 228				CEA220M16L5
R 913			RS1/10S103J	C 231				CQPA431G2A
R 914 965			RS1/10S222J	C 251 252				CKSQYB821K50
R 961			RS1P151JL					
R 956			RD1/4PS474JL	C 253 254				CEA2R2M50L52
R 959			RS1/10S223J	C 255				CEA470M10L5
				C 256				CEA470M10L2
R 960			RD1/4PS222JL	C 257 258				CKSQYB333K50
R 961			RD1/4PS333JL	C 261				CEA221M10L2
R 962			RD1/4PS473JL					
R 963			RD1/4PS103JL	C 262				CEA101M10L2
R 966			RD1/4PS122JL	C 351 352				CEA100M16L5
				C 353				CEA4R7M35L5
R 969			RS1/10S2R2J	C 461 462				CEALNP2R2M35
				C 463 464				CEAR22M50L2

-----	Circuit Symbol & No.	Part Name	-----	Part No.
C 465	466			CKSQYB473K25
C 467				CEA100M16LS2
C 468				CEA010M50LS2
C 471	472			CEA4R7M35LS
C 473	474			CGSQCH101J50
C 475	476			CEA2R2M50LS2
C 478				CEA470M10L2
C 502				CKSQYB103K50
C 503		4.7 μ F/16V		CKH1005
C 551	552			CKSQYB102K50
C 553	554			CEHAQ4R7M50
C 555	556			CEHAQ470M25
C 557	558 559 560			CFTNA224J50
C 561				CEHAQ220M50
C 562				CEHAQ101M10
C 901				CEHAQ472M16
C 902				CKSQYF473Z50
C 903				CEA102M16L2
C 911	913	330 μ F/10V		CGH1128
C 912				CEA101M10LS
C 951	952			CGSQCH100D50
C 953				CKSQYF473Z50
C 954				CKSYB473K50
C 955				CKDYF223Z50
C 956				CEA331M6R3L2
C 959				CKSYB223K50

Unit Number :

Unit Name : Key Board Unit

-----	Circuit Symbol & No.	Part Name	-----	Part No.
IL 901	902	Lamp 14v40mA		CEL1191
IL 903		Lamp 14v40mA		CEL1169

Unit Number :

Unit Name : P.C.Board(A)

-----	Circuit Symbol & No.	Part Name	-----	Part No.
S	2	Switch(FWD/REV)		ESH1003

Unit Number :

Unit Name : P.C.Board(B)

-----	Circuit Symbol & No.	Part Name	-----	Part No.
S	3	Switch(TAPE/TUN)		ESH1004
S	4	Switch(MUTE)		CSN1005

Miscellaneous Parts List

-----	Circuit Symbol & No.	Part Name	-----	Part No.
S	1	Switch(MUTE)		ESN1005
M	1	Motor Unit		EXA1162
HD	1	Head Unit		EXA1163